IDAHO POLE COMPANY
PROPOSED IN-SITU ENHANCED AEROBIC DEGRADATION PILOT STUDY WORK PLAN
AMENDMENT – BARKFILL AREA INVESTIGATION

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July 2014

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IDAHO POLE COMPANY

PROPOSED IN-SITU ENHANCED AEROBIC DEGRADATION PILOT STUDY WORK PLAN AMENDMENT – BARKFILL AREA INVESTIGATION

1.0 INTRODUCTION

Pursuant to the agency approved 'In-situ Enhanced Biodegredation Pilot Study Work Plan' (Work Plan) three groundwater wells and six boreholes were installed at the Idaho Pole Company (IPC) site during May 2014. Based on observations made during this field work, additional investigation is proposed in the Bark Fill Area before proceeding with the Pilot Study. The objective of the proposed investigation is to further evaluate the extent of subsurface impacts and source material that may still exist in the area.

This amendment to the Pilot Study Work Plan briefly summarizes the findings of the May 2014 field work and outlines the proposed approach for additional subsurface investigation. A comprehensive report presenting results of both events will be produced after the additional work is completed. The proposed schedule for conducting the additional field work is late July or August 2014, pending contractor availability.

2.0 SUMMARY OF WORK COMPLETED - MAY 2014

Three wells (IW-1, IW-2 and IW-3) were installed and six sample boreholes (B-1 through B-6) were advanced in the vicinity of the Bark Fill Extraction gallery at the IPC site during the week of May 26th, 2014. These wells/boreholes were installed and sampled using roto-sonic drilling methods. Borehole lithology and well completion details were recorded on well/borehole logs (Appendix A). Soil samples were collected from materials that visually exhibited the highest petroleum hydrocarbon impacts, which was generally at the water table. Samples were also collected from apparently un-impacted soils above and below the zone

with highest degree of impact. Samples were submitted to ARI Laboratory for analysis of pentachlorophenol (PCP) and total organic carbon (TOC). Samples were also submitted to Energy Laboratory for analysis of Total Extractable Hydrocarbons (TEH) (Method SW 8041). The three wells were developed by surging and pumping. All impacted cuttings were containerized in drums and are stored on-site pending off-site disposal. Water produced during drilling and development was treated via the on-site GRS. All wells and borehole locations, including all monitoring, injection and extraction wells in the Bark Fill area, were surveyed with survey grade GPS equipment. Locations of the new wells/boreholes are shown on Figure 1. Laboratory analytical results are presented in Table 1.

3.0 SUMMARY OF MAY 2014 FINDINGS

Soil materials encountered during borehole advance were generally fill materials at the surface consisting of sand, gravels and cobbles which was underlain by a fine grained unit of silts, fine sand and clay. A layer of wood chips (bark fill) was observed within or just below the fine grained unit and varied from about an inch to more than four feet in thickness. Visual and olfactory hydrocarbon impacts were observed in the bark fill layer which was encountered from five to ten feet below ground surface (bgs). The main water bearing unit was encountered below the fine grained/bark fill chip layer and consisted of sandy gravels and cobbles. This unit was underlain by clayey/silty fine sand which was encountered at depths ranging from 21 feet to 28 feet as observed in the well boreholes (IW-1 through 1W-3). Groundwater was encountered between five and eight feet bgs in the boreholes.

Visual and olfactory hydrocarbon impacts were evident in the bark fill chip layer and extended a few feet into the gravels and cobbles, but did not appear to extend to the fine grained unit below the gravels. Non-aqueous phase petroleum liquids (NAPL) was observed at one borehole, B-6, where droplets of NAPL were released from the soil core taken at 11 to 13 feet bgs. The NAPL was present in sand and fine gravels that were just below a thick layer of bark fill where a hydrocarbon sheen and strong odor were noted.

Soil samples were collected from all boreholes except B-3 and B-4 where only a slight hydrocarbon odor was observed. Samples were analyzed for PCP, TOC, and TEH. Results

are shown Figure 1 and in Table 1. Figure 1 also shows the approximate extent of the excavation conducted in 1995 and the location and results of confirmation sampling conducted at the excavation boundary (Appendix I, Construction Completion Report Idaho Pole Company, Geraghty and Miller, 1998). The highest concentrations of PCP in soil were reported at:

- IW-1 (7 ft bgs) = 57 (D – diluted sample) mg/kg),
- B-2 (6.5-7 ft bgs) = 13 D mg/kg, and
- B-6 (11 ft bgs) = 28 (D) mg/kg.

The highest level of TEH was reported at B-6 at 11 ft. bgs (7200 mg/kg). Total organic carbon samples were collected from the silty/bark fill layer in the well boreholes and at B-6. Percent TOC ranged from 0.311 to 2.74. Laboratory reports are included as Appendix B.

Groundwater samples were collected from the three new injection wells and from wells EW-1 and GM-3S on June 26, 2014. Preliminary results for these samples are included on Figure 2 along with the results from June quarterly sampling of the Bark Fill extraction wells and spring semi-annual groundwater sampling at nearby monitoring wells. Based on these data, the highest concentrations of PCP in groundwater are at IW-1 (450D µg/L) and P-4 (260 µg/l). Groundwater sampling data are also summarized on Table 2.

4.0 ADDITIONAL PROPOSED INVESTIGATION

Based on field observations and analytical results, IPC proposes to advance fourteen additional shallow boreholes to further evaluate site conditions and remedial options in the vicinity of the Bark Fill Extraction and Injection galleries. Up to two monitoring wells will also be completed in boreholes with significant thickness of bark fill.

Advancement of boreholes, soil sampling, well completion and development, groundwater sampling and aquifer testing will be consistent with methods approved in the initial approved In-situ Enhanced Biodegradation Pilot Study Work Plan (May 2014) for the previous field work. However, boreholes will only be advanced to just below apparent hydrocarbon

impacts with the objective to identify source materials above, at, or below the water table. The locations of the proposed boreholes are shown on Figure 2. This figure also indicates the thickness of impacted bark fill observed in boreholes completed in May 2014. Proposed borehole locations are both within and outside of the 1995 excavation footprint. The greatest thickness of bark fill was evident outside of the 1995 excavation as observed at B-5 and B-6. However a thin residual layer still remains in areas within the excavation as observed in boreholes. Additional boreholes may be completed based on observations made during the proposed field work.

Wells will be completed in two locations where adequate thickness of bark fill occurs below the water table. The wells will be screened across the water table and the bark fill.

Soil samples will be collected at each borehole and shipped to ARI laboratory for analysis of PCP. A minimum of two samples of un-impacted bark fill will also be collected to conduct soil oxidant demand testing for evaluation of remedial options as specified in Appendix C. Soil oxidant demand (SOD) or natural oxidant demand refers to the consumption of an oxidant due to reactions that are unrelated to degradation of the contaminants present at the site.

The well(s) will be aquifer tested after development to evaluate permeability of the bark fill/silty clay layer. Groundwater samples will be collected and analyzed for PCP by ARI Labs.

5.0 REPORTING AND SCHEDULE

A comprehensive report will be prepared after field work is complete and laboratory analysis is finalized. The report will include results and findings from both field events and recommendations for additional remedial actions, including pilot or bench scale testing.

Field work is scheduled for late July or August 2014 with the report to be submitted approximately one month after receipt of all laboratory data.

6.0 REFERENCES

Geraghty & Miller, January 1998. Construction Completion Report, Idaho Pole Company Bozeman, Montana

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
IDAHO POLE COMPANY - BOZEMAN MONTANA
May 2014

Sample ID	Sample Date	Depth (ft)	Pentachlorophenol (Method SW 8041) ug/kg	Total % Solids	Total Organic Carbon %	Total Extractable Hydrocarbons mg/kg *	PID Field Screen (ppm)
IPC-SB-IW1-5	5/28/2014	5	5500 ES/ 3700 D			326	1.3
IPC-SB-IW1-7	5/28/2014	7	290000 ESP/ 57000 D	79.06	1.2	4550	4.5
IPC-SB-IW1-23	5/28/2014	23	ND			ND	0.2
IPC-SB-IW2-19-21	5/28/2014	19-21	ND			ND	2.7
IPC-SB-1W2A-6	5/29/2014	6	110			28	3.4
IPC-SB-1W2A-7.5	5/29/2014	7.5	1,100	53.34	1.5	6560	8
IPC-SB-IW3-6-7	5/29/2014	6-7	180 P			59	4.5
IPC-SB-IW3-8-9	5/29/2014	8-9	130	84.12	2.74	191	1.2
IPC-SB-IW3-16	5/29/2014	16	20 P			ND	0.1
IPC-SB-B1-9-10	5/29/2014	9-10	7000 ES/ 3200 D				2.1
IPC-SB-B2-6.5-7	5/29/2014	6.5-7	130000 ESP/ 13000 D				4.8
IPC-SB-B5-5-9	5/29/2014	5-9	650				0.3
IPC-SB-B6-11	5/29/2014	11	92000 ES/ 28000 D	76.71	0.311	7200	6.2
IPC-SB-B6D-11	5/29/2014	11	42000 ES/ 23000 D	77.18	2.03	6790	5

* Tota Extractable Hydrocarbons by Massachusetts method, as modified by the state of Montana.

D - Indicates that the sample extraction was diluted.

M - Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters.

U - Indicates that the target analyte was not detected at the reported concentration.

E - Estimated concentration calculated for an analyte response aove the valid insturment calibration range. A dilution is required to obtain an accurate quantification of the analyte

P - The analyte was detected on both chromatographic columns but the quantified values differ by > 40% PRD with no obvious chromatographic interference.

S - Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obatin valid quantification of the analyte.

ND-Nondetect

Table 2
Groundwater Analytical Data - 2014
IPC - Bozeman, Montana

Well No.	Sample Date	Pentachlorophenol (EPA Method 8041) (ug/L)
5-A/Dilution	4/1/2014	**300 ES / 110**
15-A	4/1/2014	**0.63**
P-1	4/1/2014	<0.25/<0.25
P-2	4/1/2014	**3.7**
P-4/Dilution	4/1/2014	**1,400 ES / 260**
GM-4	6/26/2014	**8**
BE-2	6/26/2014	**7.5**
BE-3	6/26/2014	**15.0**
BE-4	6/26/2014	**9.9**
BE-5	6/26/2014	**12**
IW-1	6/26/2014	**780 E / 450**
IW-2	6/26/2014	**49**
IW-3	6/26/2014	**160 E / 120**
EW-1	6/26/2014	**250 E / 160**
GM-3S	6/26/2014	**0.89**

Note: Bolded concentrations are above cleanup levels.

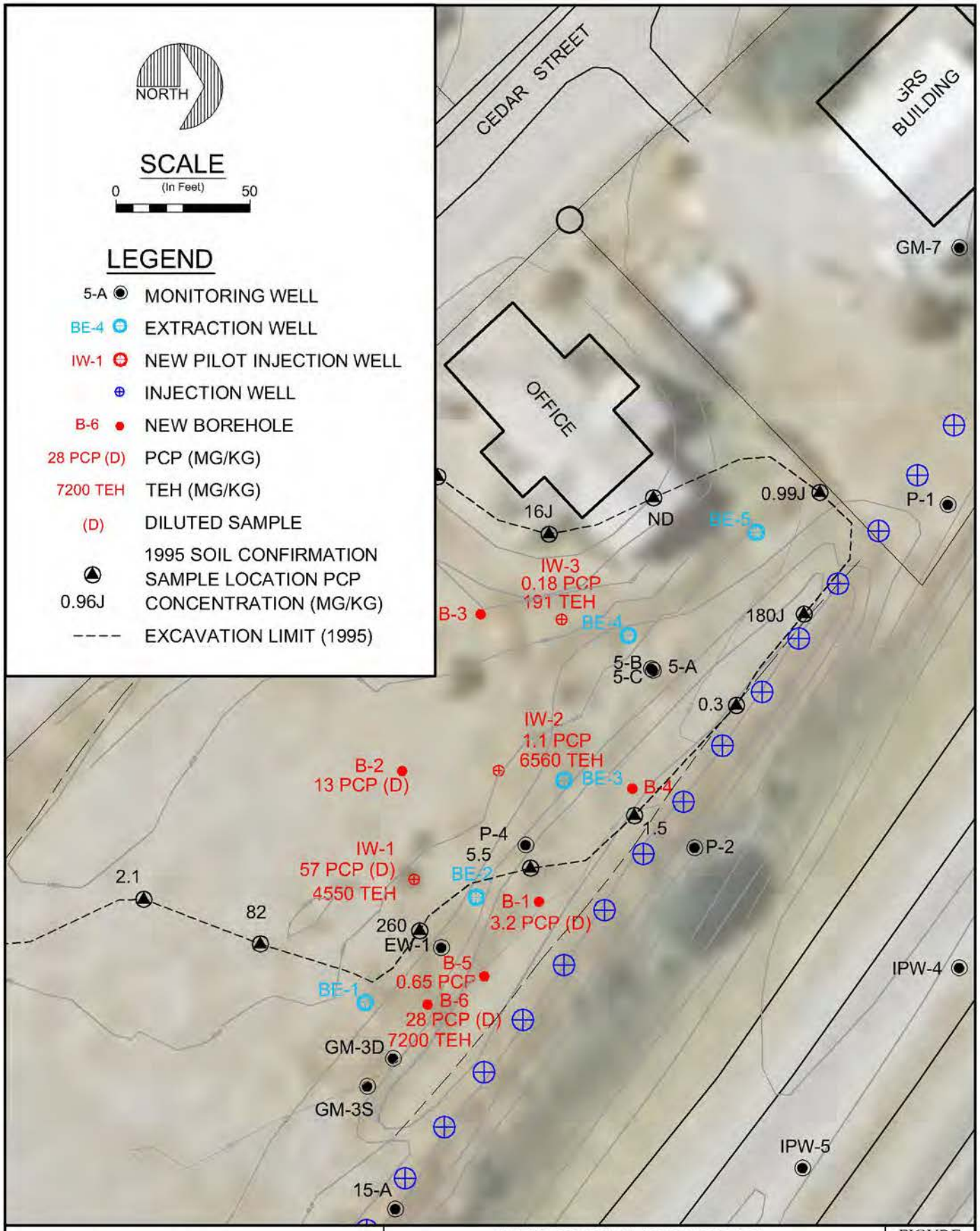
D - Dilluted Sample

E - Estimated concentration calculated for an analyte response aove the valid insturment calibration range. A dilution is required to obtain an accurate quantification of the analyte

P - The analyte was detected on both chromatographic columns but the quantified values differ by ≥ 40% PRD with no obvious chromatographic interference.

s - Indicates an anlyte response that has saturated the detector. The calculated concentration is not valid, a dilution is required to obtain valid quatifation of the analyte.

FIGURES



IDAHO POLE COMPANY BOZEMAN, MONTANA	NEW INJECTION WELL AND BOREHOLE LOCATIONS AND SOIL ANALYTICAL RESULTS	FIGURE 1

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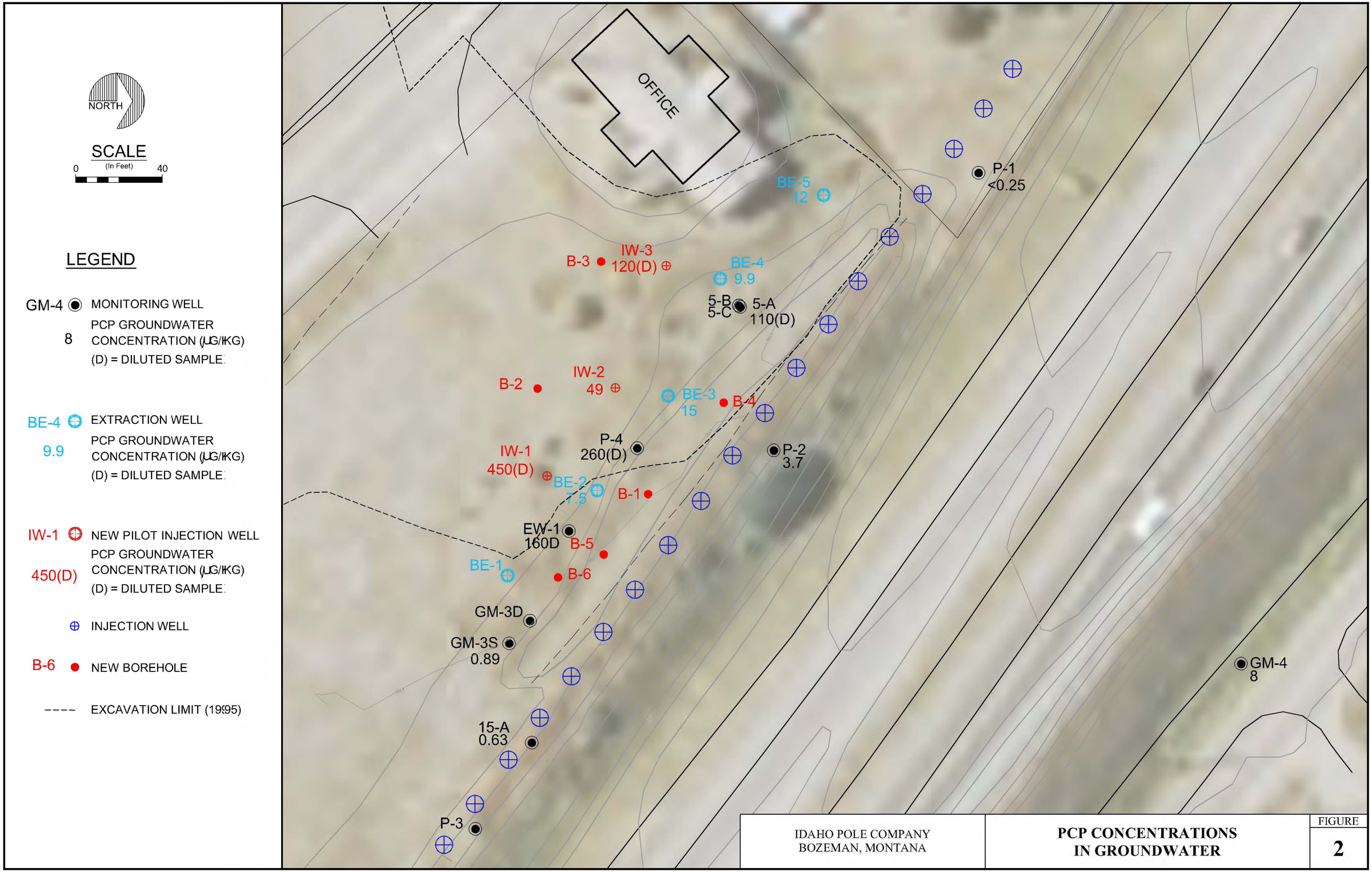
Consulting Scientists and Engineers



IDAHO POLE COMPANY BOZEMAN, MONTANA	PCP CONCENTRATIONS IN GROUNDWATER	FIGURE 2

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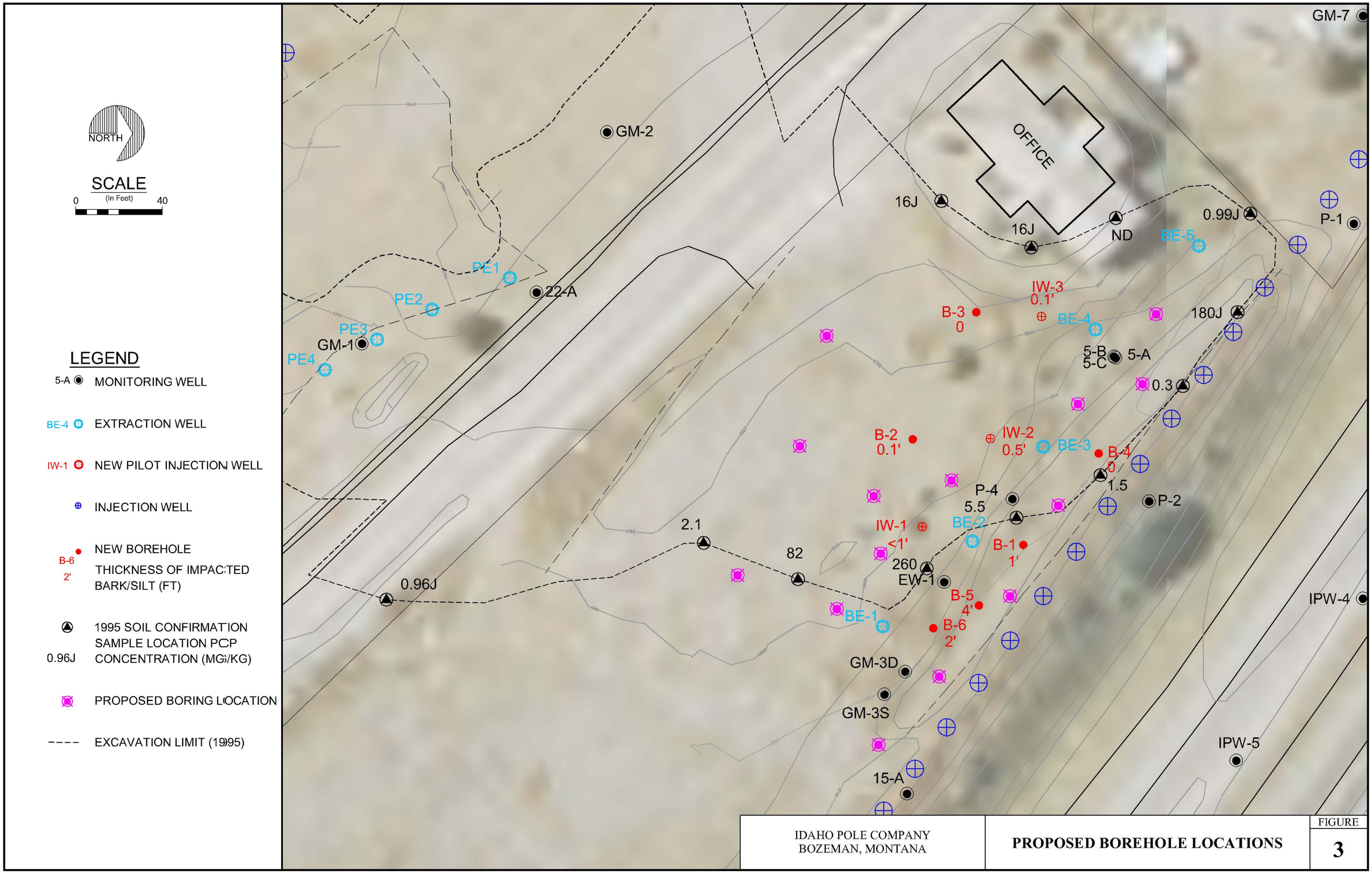

IDAHO POLE COMPANY BOZEMAN, MONTANA	PROPOSED BOREHOLE LOCATIONS	FIGURE 3

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APPENDIX A
BOREHOLE AND WELL COMPLETION LOGS

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-1

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

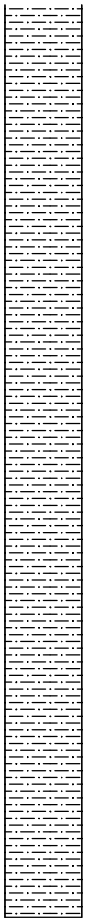
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528941.443; E 1579540.215
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4.5"
Total Depth Drilled (ft): 19

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

Northing: 528941.443 Easting: 1579540.215
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4751.858
MP Height Above or Below Ground (ft): MP Elevation (ft): 4751.858

Remarks: Hole plugged with bentonite

WELL CONSTRUCTION



Bentonite Chips 0.0

Bottom of Hole 19.0

GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 1.0' **Silty sand**
Light brown; loose; gravels and cobbles; roots

1.0 - 4.0' **Silty clay with fine sand, gravels and cobbles**
Slightly moist at 3'; brownish black; hydrocarbon odor at 2.5'-3'; firm

4.0 - 8.0' **Silty clayey sand**
Slightly moist; grayish brown; very slight hydrocarbon odor; loose

8.0 - 8.5' **Gravel "pit run"**
Wet; hydrocarbon sheen/odor

8.5 - 9.0' **Clayey silt**
Black; hydrocarbon odor

9.0 - 10.0' **Wood chips "Bark fill"**
Wet; black; hydrocarbon sheen; sample taken

10.0 - 10.8' **Fine sandy silt**
Wet; dark gray; hydrocarbon sheen; layer of bark at bottom <1" thick

10.8 - 12.0' **Silty sand well sorted**
Wet; dark gray; hydrocarbon sheen and odor;

12.0 - 14.0' **Gravelly sand with cobbles**
Wet; hydrocarbon odor; loose

14.0 - 16.0' **Silty sand**
Wet; gray; hydrocarbon odor; gravels and cobbles

16.0 - 19.0' **Silty sand**
Wet; yellowish brown; no odor; cobbles and gravels

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-2

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

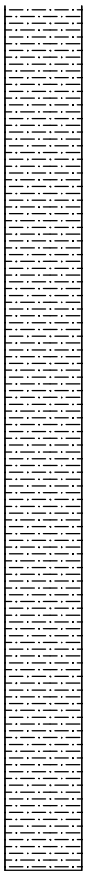
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528890.34; E 1579491.419
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4.5"
Total Depth Drilled (ft): 9

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

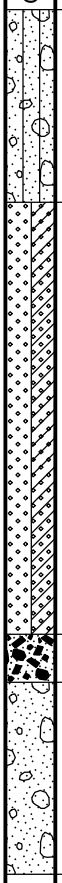
Northing: 528890.34 Easting: 1579491.419
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4753.41
MP Height Above or Below Ground (ft): MP Elevation (ft): 4753.41

Remarks: Hole plugged with bentonite

WELL CONSTRUCTION



GRAPHICS



GEOLOGICAL DESCRIPTION

0.0 - 2.0' **Silty sand**
Dry; light brown; gravels and cobbles; loose

2.0 - 6.5' **Sandy clay**
Slightly moist; brownish black; gravels; firm

6.5 - 7.0' **Sandy clay with wood chips "Bark fill"**
Slightly moist; hydrocarbon odor/no sheen; wood is minor; sample taken

7.0 - 9.0' **Silty sand with gravels and cobbles**
Wet; gray brown to brown at 9'; hydrocarbon odor and sheen

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-3

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

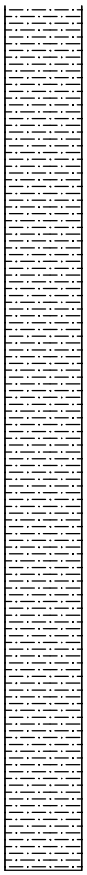
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528919.614; E 1579432.85
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4.5"
Total Depth Drilled (ft): 9

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

Northing: 528919.614 Easting: 1579432.85
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4754.072
MP Height Above or Below Ground (ft): MP Elevation (ft): 4754.072

Remarks: Hole plugged with bentonite

WELL CONSTRUCTION



Bentonite Chips 0.0

Bottom of Hole 9.0

GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 2.0' **Silty clay with sand, gravels and cobbles**
Slightly moist; dark brown; no odor; firm

2.0 - 3.5' **Fine sandy silt**
Slightly moist; no odor; firm; no gravels or cobbles

3.5 - 9.0' **Sand**
Very slight hydrocarbon odor; poorly sorted; loose; cobbles and gravels

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-4

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

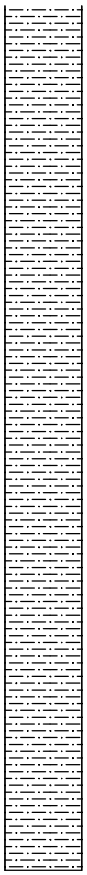
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528976.256; E 1579498.002
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4"
Total Depth Drilled (ft): 9

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

Northing: 528976.256 Easting: 1579498.002
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4751.927
MP Height Above or Below Ground (ft): MP Elevation (ft): 4751.927

Remarks: Hole plugged with bentonite

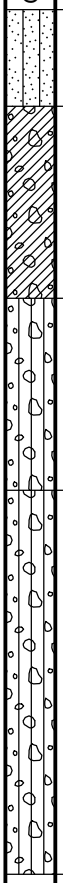
WELL CONSTRUCTION



Bentonite Chips 0.0

Bottom of Hole 9.0

GRAPHICS



GEOLOGICAL DESCRIPTION

0.0 - 1.0' **Silty sand**
Dry; light brown; loose

1.0 - 3.0' **Silty clay with gravels and cobbles**
Slightly moist; dark brown; no odor to slight hydrocarbon odor at 3'; firm

3.0 - 5.0' **Sandy silt with cobbles and gravel**
Moist; dark gray; very slight odor

5.0 - 9.0' **Sandy silty with cobbles and gravel**
Moist; becoming wet at 7'; grayish brown in color; no odor

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-5

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

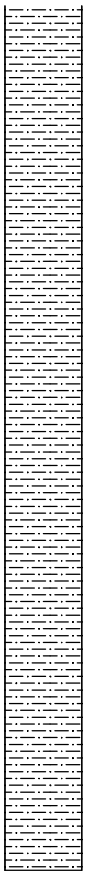
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528920.911; E 1579568.091
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4"
Total Depth Drilled (ft): 9

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

Northing: 528920.911 Easting: 1579568.091
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4751.615
MP Height Above or Below Ground (ft): MP Elevation (ft): 4751.615

Remarks: Hole plugged with bentonite

WELL CONSTRUCTION



Bentonite Chips 0.0

Bottom of Hole 9.0

GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 2.0' **Sandy silt**
Dry; light brown; loose; cobbles and gravels

2.0 - 4.0' **Sandy clay with gravels and cobbles**
Slightly moist; dark brown; no odor; firm

4.0 - 5.0' **Silty sand and wood chips "Bark fill"**
Slightly moist; dark gray; very slight odor

5.0 - 9.0' **Barkfill and fine silty sand**
Wet; black; hydrocarbon sheen and odor; layer of medium gravels at 6'; sample taken

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Borehole

Hole Name: B-6

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

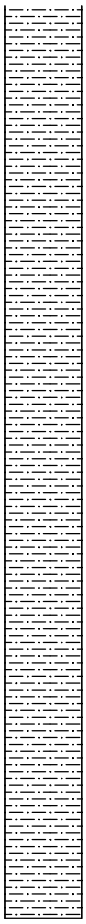
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528899.83; E 1579578.653
Location Description: West of 3D Well
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 4"
Total Depth Drilled (ft): 19

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	N		NA
Surface Casing Used?	N		NA
Screen/Perforations?	N		NA
Sand Pack?	N		NA
Annular Seal?	N		NA
Surface Seal?	N		NA
DEVELOPMENT/SAMPLING			
Well Developed?	N		NA
Water Samples Taken?	N		NA
Boring Samples Taken?	N		NA

Northing: 528899.83 Easting: 1579578.653
Static Water Level Below MP: Surface Casing Height (ft):
Date: Riser Height (ft):
MP Description: Ground Surface Elevation (ft): 4751.424
MP Height Above or Below Ground (ft): MP Elevation (ft): 4751.424

Remarks: Hole plugged with bentonite

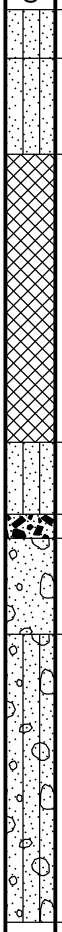
WELL CONSTRUCTION



Bentonite Chips 0.0

Bottom of Hole 19.0

GRAPHICS



GEOLOGICAL DESCRIPTION

0.0 - 1.0' **Silty sand**
Dry; brown; no odor; loose

1.0 - 3.0' **Silty sand with fine wood fragments**
Slightly moist; dark brown; no odor; loose

3.0 - 9.0' **Bark fill**
Very moist to wet at 8'; no odor; (very little recovery from 5'-9')

9.0 - 10.5' **Silty sand**
Wet; dark gray; strong odor; sheen;

10.5 - 11.0' **Layer of wood chips "Bark fill"**
Wet; hydrocarbon sheen/odor; sample taken

11.0 - 13.0' **Sand and fine gravels**
Wet; dark gray; hydrocarbon sheen; loose; droplets of dark brown LNAPL

13.0 - 19.0' **Silty sand with cobbles and gravels**
Wet; yellowish brown; coarse sand increases at 17.5' and fines decrease

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Injection Well

Hole Name: IW-1

Date Hole Started: 5/28/14 Date Hole Finished: 5/28/14

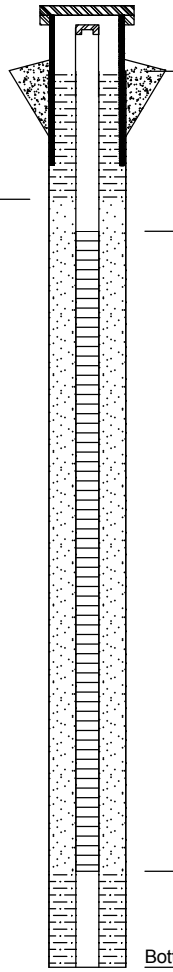
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528894.711: E 1579531.861
Location Description: 25' South of BE-2
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 8
Total Depth Drilled (ft): 28

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	Y	4.5" Sch 40, PVC	0-28'
Surface Casing Used?	N		
Screen/Perforations?	Y	0.020-inch slot, Sch 40 PVC	5-25'
Sand Pack?	Y	10/20 silica sand	4-25'
Annular Seal?	Y	Bentonite Chips	0-4'; 25-28'
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	Y	4' Core (4 .75" OD)	0-9'; 9-18'

Northing: 528894.711 Easting: 1579531.861
Static Water Level Below MP: 5.4' Surface Casing Height (ft):
Date: 5/28/14 Riser Height (ft):
MP Description: bgs Ground Surface Elevation (ft): 4753.054
MP Height Above or Below Ground (ft): MP Elevation (ft): 4755.409

Remarks: Start drilling at 8:35 a.m. WL at 5.4 bgs on 5/28/2014 at 2:20 p.m. Recovery 3' and 5'; cores 0-9' and 9-18'; 4" core (4 3/4" OD) 6.5" Ream

WELL CONSTRUCTION



GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 5.0' **Cobbles, gravel, silt matrix** [Fill]
Dry to slightly moist; brownish black; slight hydrocarbon odor at 5'; some organics (wood) from ~3-5' (hard drilling to 5' then very soft - DO); few fine roots throughout; sample at 5'

5.0 - 12.0' **Cobbles, gravel with silty matrix**
Wet; light gray; strong hydrocarbon odor; no sheen on water; some organics on top 1' of sample; poorly sorted sub-angular cobbles up to 6" in diameter; sample at 7' (possibly missing core from 5 ~10" - soft silt - DO)

12.0 - 25.0' **Sandy gravels and cobbles, poorly sorted**
Wet; light brown; slight hydrocarbon odor; cobbles up to 8" in diameter; angular to sub-rounded; diesel odor throughout top 10' of core; bottom of sample warm from drilling; sample at 23'

25.0 - 28.0' **Clayey sand**
Slightly moist; yellowish brown; no odor; very fine sand; very few fine gravel; firm

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Injection Well

Hole Name: IW-2

Date Hole Started: 5/28/14 Date Hole Finished: 5/28/14

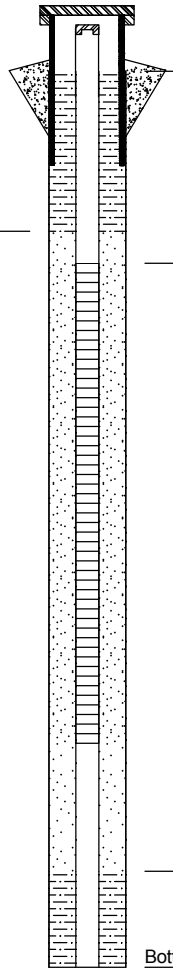
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528926.266; E 1579491.229
Location Description: 25' South of BE-3
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 8
Total Depth Drilled (ft): 28

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	Y	4.5" Sch 40, PVC	0-24'
Surface Casing Used?	N		
Screen/Perforations?	Y	0.020-inch slot, Sch 40 PVC	6-21'
Sand Pack?	Y	10/20 silica sand	5-25'
Annular Seal?	Y	Bentonite Chips	0-5'; 25-28'
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Northing: 528926.266 Easting: 1579491.229
Static Water Level Below MP: 6.7' Surface Casing Height (ft): 2.14
Date: 5/29/14 Riser Height (ft):
MP Description: bgs Ground Surface Elevation (ft): 4753.163
MP Height Above or Below Ground (ft): MP Elevation (ft): 4755.73

Remarks: SWL on 5/29/2014 = 6.7 bgs

WELL CONSTRUCTION



GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 2.0' **Clayey gravels and cobbles**
Dry; brown to brownish black; no hydrocarbon odor; poorly sorted fine to coarse sands; some fine roots; stiff

2.0 - 5.0' **Clayey sandy silt with gravels and cobbles**
Dry to very moist at 4-5'; dark brown; no hydrocarbon odor

5.0 - 7.0' **Silty sand**
Wet; light brown; no odor or sheen; coarse with some gravels

7.0 - 7.5' **Gravelly silty sand with wood chips "Bark fill"**
Wet; brownish black; strong hydrocarbon odor

7.5 - 9.0' **Silty sand with cobbles and coarse gravel**
Wet; grayish brown; hydrocarbon odor; (2'-8' missing core - no recovery; slough that fell in hole has hydrocarbon odor)

9.0 - 18.0' **Silty sandy gravels**
Wet; medium brown/gray; strong hydrocarbon odor at 8-10' increasing with depth; cobbles up to 6" in diameter throughout (15%); rounded to sub-rounded gravels; no sheen

18.0 - 21.0' **Silty sandy gravels**
Wet; medium brown/gray; no hydrocarbon odor; cobbles up to 6" in diameter throughout (15%); rounded to sub-rounded gravels; no sheen

21.0 - 28.0' **Clayey sand**
Moist; yellowish brown; firm; well graded sand; fine

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

Hydrometrics, Inc.

Consulting Scientists and Engineers
Billings, Montana

Injection Well

Hole Name: IW-3

Date Hole Started: 5/29/14 Date Hole Finished: 5/29/14

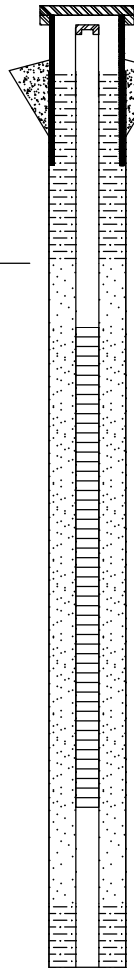
Client: McFarland Cascade
Project: Idaho Pole
County: Gallatin State: Montana
Property Owner: McFarland Cascade
Legal Description: N 528949.786; E 1579434.798
Location Description:
Recorded By: HK
Drilling Company: Environmental West
Driller: Greg W.
Drilling Method: Roto Sonic
Drilling Fluids Used:
Purpose of Hole: Install Monitor Well
Target Aquifer:
Hole Diameter (in): 8
Total Depth Drilled (ft): 28

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	Y	4" Sch 40, PVC	0-26'
Surface Casing Used?	N		
Screen/Perforations?	Y	0.020-inch slot, Sch 40 PVC	8-23'
Sand Pack?	Y	10/20 silica sand	6-26'
Annular Seal?	Y	Bentonite Chips	0-6'; 26-28'
Surface Seal?	N		
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Northing: 528949.786 Easting: 1579434.798
Static Water Level Below MP: 9.55 Surface Casing Height (ft):
Date: 5/29/14 Riser Height (ft):
MP Description: TOC Ground Surface Elevation (ft): 4753.835
MP Height Above or Below Ground (ft): MP Elevation (ft): 4756.306

Remarks: Start drilling at 7:45 a.m.; SWL on 5/29/2014 at 3:15 p.m. = 9.55' TOC; SU = 2.14'

WELL CONSTRUCTION



Bentonite Chips 0.0
6.0 10/20 Silica Sand
8.0 0.020 Slot Screen
26.0 Bentonite Chips
Bottom of Hole 28.0

GRAPHICS

GEOLOGICAL DESCRIPTION

0.0 - 2.0' **Silty sand with cobbles and gravel**
Brown; loose; few roots

2.0 - 5.0' **Clayey sand**
Slight moist; dark brown; cobbles and gravels; firm

5.0 - 8.0' **Sandy silt with some clay**
Very moist; brown; no hydrocarbon odor; soft; cobbles and gravels; sample at 6'-7'

8.0 - 9.0' **Sandy silt with gravel and cobbles**
Very moist to wet; grayish black; strong hydrocarbon odor; wood chips at 8'; sample taken

9.0 - 16.0' **Silty sand, poorly sorted, gravels and cobbles**
Grayish brown; strong hydrocarbon odor decreasing with depth; few fines; sample at 16'

16.0 - 23.0' **Silty sand, poorly sorted, gravels and cobbles**
Wet; light brown; no odor; cobbles up to 8" in diameter

23.0 - 24.0' **Coarse sand, well sorted**
Wet; very few fines

24.0 - 26.0' **Gravelly sand with cobbles**
Wet, very few fines

26.0 - 28.0' **Silty sand, fine**
Wet; light brown; no odor; lense of gravels at 27'

STANDARD_REV3 NEW WELLS & BOREHOLES.GPJ HYDHLN2.GDT 7/15/14

APPENDIX B
ARI LABORATORY REPORT

Analytical Resources, Incorporated
Analytical Chemists and Consultants

16 June 2014

Heidi Kaiser
Hydrometrics, Inc.
5602 Hesper Road
Billings, MT 59106

RE: Client Project: Idaho Pole
ARI Job No.: YM21

Dear Heidi:

Please find enclosed the original Chain-of-Custody (COC) records and the final results for the samples from the project referenced above. Analytical Resources Inc. (ARI) received fourteen soil samples on June 3, 2014. The samples were analyzed for PCP and TOC as requested.

A matrix spike (MS) was prepared and analyzed for TOC in conjunction with sample IPC-SB-IW1-7. The percent recovery for TOC was not within control limits following the analysis of the MS. The MS was re-analyzed. The percent recovery was not within control limits for the re-analysis. Since the percent recoveries for TOC were within acceptable QC limits for the corresponding LCS and SRM, it was concluded that the sample matrix was the cause of the poor MS recoveries. No further corrective actions were taken. The results for both MSs have been submitted.

There were no further anomalies associated with these analyses.

An electronic copy of these reports and all associated raw data will be kept on file at ARI. Should you have any questions regarding these results, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: File YM21

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: MA1	Turn-around Requested: STANDARD
ARI Client Company: HYDROMETRICS	Phone: 406 656 1172
Client Contact: Heidi Kaiser	406-697-0410
Client Project Name: IDAHO POLE	
Client Project #:	Samplers: HEIDI KAISER (406-697-0410)

Page: 1	of 2
Date: 5/30/14	Ice Present?
No. of Coolers:	Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	PCP 8041A	TOC							Notes/Comments
IPC-SB-IW1-5'	5-28-14	1005	SOIL	1	X								
IPC-SB-IW1-7'		0945			X	X							
IPC-SB-IW1-23'		1030			X								
IPC-SB-IW2-19.21'		1500			X								
IPC-SB-IW2A-6'	5-29-14	0735			X								
IPC-SB-IW2A-7.5'		0730			X	X							
IPC-SB-IW3-6-7'		0805			X								
IPC-SB-IW3-8-9'		0915			X	X							
IPC-SB-IW3-16'		0930			X								
IPC-SB-B1-9-10'		1245			X								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Please call Heidi Kaiser if any questions about samples (406) 697-0410	(Signature) Heidi Kaiser	(Signature) FED EX	(Signature)	(Signature)
	Printed Name: HEIDI KAISER	Printed Name:	Printed Name:	Printed Name: A. Volgarelsen
	Company: HYDROMETRICS	Company:	Company:	Company: ARI
	Date & Time: ~~5/30/14 HK 900 AM~~	Date & Time: 6/2/14 1200	Date & Time:	Date & Time: 6/3/14 1045

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

YM21 : 000002

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: STANDARD
ARI Client Company: HYDROMETRICS	Phone: 406-656-1172
Client Contact: HEIDI KAISER	406-697-0410
Client Project Name: IDAHO POLE	
Client Project #:	Samplers: H. KAISER

Page: 2 of 2

Date: 5/30/14 | Ice Present?

No. of Coolers: | Cooler Temps:

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	EPA 8041A PCP	TOC							Notes/Comments
IPC-SB-B2-6.5-7'	5-29-14	1310	SOIL	1	X								
IPC-SB-B5-5-9'	↓	1515	↓	↓	X								
IPC-SB-B6-11'		1615			X	X							
IPC-SB-B6D-11'	↓	1630	↓	↓	X	X							

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) Heidi Kaiser	(Signature) Fed EX	(Signature)	(Signature)
	Printed Name: HEIDI KAISER	Printed Name:	Printed Name.	Printed Name: A. Volgardsen
	Company: HYDROMETRICS	Company:	Company	Company: ARI
	Date & Time: ~~5/30/14 0700~~ HC	Date & Time: 6/2/14 1200	Date & Time:	Date & Time: 6/3/14 1045

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

YM21 : 00003

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Hydrometrics
COC No(s): _____ (NA)
Assigned ARI Job No: YM21

Project Name: Idaho Pole
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
Tracking No: 770160590894 (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry)
Time: 1045 — 0.8

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 90077952

Cooler Accepted by: AV Date: 6/3/14 Time: 1045

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

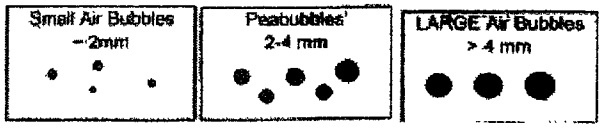
Samples Logged by: AV Date: 6/3/14 Time: 1215

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YM21
Client: Hydrometrics Inc.
Project Event: N/A
Project Name: Idaho Pole

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	IPC-SB-IW1-5	YM21A	14-10583	Soil	05/28/14 10:05	06/03/14 10:45
2.	IPC-SB-IW1-23	YM21B	14-10584	Soil	05/28/14 10:30	06/03/14 10:45
3.	IPC-SB-IW2-19-21	YM21C	14-10585	Soil	05/28/14 15:00	06/03/14 10:45
4.	IPC-SB-1W2A-6	YM21D	14-10586	Soil	05/29/14 07:35	06/03/14 10:45
5.	IPC-SB-IW3-6-7	YM21E	14-10587	Soil	05/29/14 08:05	06/03/14 10:45
6.	IPC-SB-IW3-16	YM21F	14-10588	Soil	05/29/14 09:30	06/03/14 10:45
7.	IPC-SB-B1-9-10	YM21G	14-10589	Soil	05/29/14 12:45	06/03/14 10:45
8.	IPC-SB-B2-6.5-7	YM21H	14-10590	Soil	05/29/14 13:10	06/03/14 10:45
9.	IPC-SB-B5-5-9	YM21I	14-10591	Soil	05/29/14 15:15	06/03/14 10:45
10.	IPC-SB-IW1-7	YM21J	14-10592	Soil	05/28/14 09:45	06/03/14 10:45
11.	IPC-SB-1W2A-7.5	YM21K	14-10593	Soil	05/29/14 07:30	06/03/14 10:45
12.	IPC-SB-IW3-8-9	YM21L	14-10594	Soil	05/29/14 09:15	06/03/14 10:45
13.	IPC-SB-B6-11	YM21M	14-10595	Soil	05/29/14 16:15	06/03/14 10:45
14.	IPC-SB-B6D-11	YM21N	14-10596	Soil	05/29/14 16:30	06/03/14 10:45

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

YM21 : 00006

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

YM21.00007

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

YM21 : 00008

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: MB-060314
METHOD BLANK

Lab Sample ID: MB-060314
LIMS ID: 14-10583
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: NA
Date Received: NA

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 17:00
Instrument/Analyst: ECD1/YZ

Sample Amount: 10.0 mL
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: NA

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	6.2	< 6.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	65.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-5
SAMPLE

Lab Sample ID: YM21A
LIMS ID: 14-10583
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 16:29
Instrument/Analyst: ECD1/YZ

Sample Amount: 9.06 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 9.6%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**69**	**5,500 ES**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	70.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-5
DILUTION

Lab Sample ID: YM21A
LIMS ID: 14-10583
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/13/14 16:10
Instrument/Analyst: ECD1/YZ

Sample Amount: 9.06 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 50.0
Percent Moisture: 9.6%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**340**	**3,700**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	D

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-23
SAMPLE

Lab Sample ID: YM21B
LIMS ID: 14-10584
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 19:26
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.73 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 12.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.2	< 7.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	34.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-23
MATRIX SPIKE

Lab Sample ID: YM21B
LIMS ID: 14-10584
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 20:01
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.75 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 12.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.1	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	52.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-23
MATRIX SPIKE DUP

Lab Sample ID: YM21B
LIMS ID: 14-10584
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 20:37
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.75 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 12.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.1	---

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	55.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW2-19-21
SAMPLE

Lab Sample ID: YM21C
LIMS ID: 14-10585
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 17:08
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.74 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 12.8%

CAS Number	Analyte	RL	Result
87-86-5	Pentachlorophenol	7.2	< 7.2 U

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	29.9%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-1W2A-6
SAMPLE

Lab Sample ID: YM21D
LIMS ID: 14-10586
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 21:50
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.45 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 15.8%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**7.4**	**110**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	49.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW3-6-7
SAMPLE

Lab Sample ID: YM21E
LIMS ID: 14-10587
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 22:26
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.54 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 24.8%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**8.3**	**180 P**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	84.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW3-16
SAMPLE

Lab Sample ID: YM21F
LIMS ID: 14-10588
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 23:03
Instrument/Analyst: ECD1/YZ

Sample Amount: 5.78 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 42.3%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**11**	**20 P**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	59.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B1-9-10
SAMPLE

Lab Sample ID: YM21G
LIMS ID: 14-10589
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 23:38
Instrument/Analyst: ECD1/YZ

Sample Amount: 5.18 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 48.4%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**12**	**7,000 ES**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	57.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B1-9-10
DILUTION

Lab Sample ID: YM21G
LIMS ID: 14-10589
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 17:43
Instrument/Analyst: ECD1/YZ

Sample Amount: 5.18 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 20.0
Percent Moisture: 48.4%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**240**	**3,200**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	88.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B2-6.5-7
SAMPLE

Lab Sample ID: YM21H
LIMS ID: 14-10590
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/11/14 00:16
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.38 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 16.2%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**7.5**	**130,000 ESP**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	82.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B2-6.5-7
DILUTION

Lab Sample ID: YM21H
LIMS ID: 14-10590
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 18:19
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.38 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 50.0
Percent Moisture: 16.2%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**370**	**13,000**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	D

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B5-5-9
SAMPLE

Lab Sample ID: YM21I
LIMS ID: 14-10591
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 18:57
Instrument/Analyst: ECD1/YZ

Sample Amount: 9.91 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 1.7%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**63**	**650**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	110%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-7
SAMPLE

Lab Sample ID: YM21J
LIMS ID: 14-10592
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/11/14 01:27
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.92 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 1.00
Percent Moisture: 21.0%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**7.9**	**290,000 ESP**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	104%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW1-7
DILUTION

Lab Sample ID: YM21J
LIMS ID: 14-10592
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/13/14 16:46
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.92 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 500
Percent Moisture: 21.0%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**4,000**	**57,000**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	D

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-1W2A-7.5
SAMPLE

Lab Sample ID: YM21K
LIMS ID: 14-10593
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 20:46
Instrument/Analyst: ECD1/YZ

Sample Amount: 5.58 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 44.4%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**110**	**1,100**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	85.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-IW3-8-9
SAMPLE

Lab Sample ID: YM21L
LIMS ID: 14-10594
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 21:21
Instrument/Analyst: ECD1/YZ

Sample Amount: 8.16 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 2.00
Percent Moisture: 18.7%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**15**	**130**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	76.3%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B6-11
SAMPLE

Lab Sample ID: YM21M
LIMS ID: 14-10595
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 21:56
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.86 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 21.8%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**80**	**92,000 ES**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	104%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B6-11
DILUTION

Lab Sample ID: YM21M
LIMS ID: 14-10595
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/13/14 17:24
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.86 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 250
Percent Moisture: 21.8%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**2,000**	**28,000**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery

2,4,6-Tribromophenol	D

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B6D-11
SAMPLE

Lab Sample ID: YM21N
LIMS ID: 14-10596
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/12/14 22:34
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.73 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 10.0
Percent Moisture: 22.9%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**81**	**42,000 ES**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	99.6%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041
Extraction Method: SW3550C

Sample ID: IPC-SB-B6D-11
DILUTION

Lab Sample ID: YM21N
LIMS ID: 14-10596
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/29/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/13/14 17:59
Instrument/Analyst: ECD1/YZ

Sample Amount: 7.73 g-dry-wt
Final Extract Volume: 25 mL
Dilution Factor: 250
Percent Moisture: 22.9%

CAS Number	Analyte	RL	Result
87-86-5	**Pentachlorophenol**	**2,000**	**23,000**

Reported in µg/kg (ppb)

Chlorophenol Surrogate Recovery	
2,4,6-Tribromophenol	D

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8041 CHLOROPHENOLICS SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Client ID	TBP	TOT OUT
MB-060314	65.2%	0
LCS-060314	65.0%	0
IPC-SB-IW1-5	70.0%	0
IPC-SB-IW1-5 DL	D	0
IPC-SB-IW1-23	34.2%	0
IPC-SB-IW1-23 MS	52.8%	0
IPC-SB-IW1-23 MSD	55.0%	0
IPC-SB-IW2-19-21	29.9%	0
IPC-SB-1W2A-6	49.2%	0
IPC-SB-IW3-6-7	84.0%	0
IPC-SB-IW3-16	59.2%	0
IPC-SB-B1-9-10	57.2%	0
IPC-SB-B1-9-10 DL	88.8%	0
IPC-SB-B2-6.5-7	82.8%	0
IPC-SB-B2-6.5-7 DL	D	0
IPC-SB-B5-5-9	110%	0
IPC-SB-IW1-7	104%	0
IPC-SB-IW1-7 DL	D	0
IPC-SB-1W2A-7.5	85.6%	0
IPC-SB-IW3-8-9	76.3%	0
IPC-SB-B6-11	104%	0
IPC-SB-B6-11 DL	D	0
IPC-SB-B6D-11	99.6%	0
IPC-SB-B6D-11 DL	D	0

	QC LIMITS
(TBP) = 2,4,6-Tribromophenol	(10-129)

Prep Method: SW3550B
Log Number Range: 14-10583 to 14-10596

FORM-II SW8041

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: LCS-060314
LAB CONTROL

Lab Sample ID: LCS-060314
LIMS ID: 14-10583
Matrix: Soil
Data Release Authorized: MW
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted: 06/03/14
Date Analyzed: 06/10/14 17:37
Instrument/Analyst: ECD1/YZ

Sample Amount: 10.0 mL
Final Extract Volume: 25 mL
Dilution Factor: 1.00

Analyte	Lab Control	Spike Added	Recovery
Pentachlorophenol	49.2	62.5	78.7%

Chlorophenols Surrogate Recovery

2,4,6-Tribromophenol	65.0%

Results reported in µg/kg

FORM III

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCP by GC/ECD Method SW8041

Sample ID: IPC-SB-IW1-23
MS/MSD

Lab Sample ID: YM21B
LIMS ID: 14-10584
Matrix: Soil
Data Release Authorized:
Reported: 06/16/14

QC Report No: YM21-Hydrometrics Inc.
Project: Idaho Pole

Date Sampled: 05/28/14
Date Received: 06/03/14

Date Extracted MS/MSD: 06/03/14

Date Analyzed MS: 06/10/14 20:01
MSD: 06/10/14 20:37
Instrument/Analyst MS: ECD1/YZ
MSD: ECD1/YZ
Percent Moisture: 12.8%

Sample Amount MS: 8.75 g-dry-wt
MSD: 8.75 g-dry-wt
Final Extract Volume MS: 25 mL
MSD: 25 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Pentachlorophenol	< 7.16	32.9	71.4	46.1%	33.0	71.4	46.2%	0.3%

Results reported in µg/kg
RPD calculated using sample concentrations per SW846.

FORM III

SAMPLE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/28/14
Date Received: 06/03/14

Client ID: IPC-SB-IW1-7
ARI ID: 14-10592 YM21J

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/05/14 060514#1	SM2540G	Percent	0.01	79.06
Total Organic Carbon	06/10/14 061014#1	Plumb,1981	Percent	0.020	1.20

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/29/14
Date Received: 06/03/14

Client ID: IPC-SB-1W2A-7.5
ARI ID: 14-10593 YM21K

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/05/14 060514#1	SM2540G	Percent	0.01	53.34
Total Organic Carbon	06/10/14 061014#1	Plumb,1981	Percent	0.020	1.50

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/29/14
Date Received: 06/03/14

Client ID: IPC-SB-IW3-8-9
ARI ID: 14-10594 YM21L

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/05/14 060514#1	SM2540G	Percent	0.01	84.12
Total Organic Carbon	06/10/14 061014#1	Plumb,1981	Percent	0.020	2.74

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/29/14
Date Received: 06/03/14

Client ID: IPC-SB-B6-11
ARI ID: 14-10595 YM21M

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/05/14 060514#1	SM2540G	Percent	0.01	76.71
Total Organic Carbon	06/10/14 061014#1	Plumb,1981	Percent	0.020	0.311

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/29/14
Date Received: 06/03/14

Client ID: IPC-SB-B6D-11
ARI ID: 14-10596 YM21N

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/05/14 060514#1	SM2540G	Percent	0.01	77.18
Total Organic Carbon	06/10/14 061014#1	Plumb,1981	Percent	0.020	2.03

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	06/05/14	Percent	< 0.01 U	ICB
Total Organic Carbon	06/10/14	Percent	< 0.020 U	ICB

LAB CONTROL RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon Plumb,1981	ICVL	06/10/14	Percent	0.093	0.100	93.0%

STANDARD REFERENCE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	06/10/14	Percent	3.32	2.99	111.0%

REPLICATE RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/28/14
Date Received: 06/03/14

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YM21J Client ID: IPC-SB-IW1-7					
Total Solids	06/05/14	Percent	79.06	79.34 80.50	1.0%
Total Organic Carbon	06/10/14	Percent	1.20	1.36 0.973	16.5%

MS/MSD RESULTS-CONVENTIONALS
YM21-Hydrometrics Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 06/11/14

Project: Idaho Pole
Event: NA
Date Sampled: 05/28/14
Date Received: 06/03/14

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YM21J Client ID: IPC-SB-IW1-7						
Total Organic Carbon	06/10/14	Percent	1.20	2.45	2.18	57.3%
Total Organic Carbon	06/10/14	Percent	1.20	8.52	5.09	143.8%

ANALYTICAL SUMMARY REPORT

June 19, 2014

Hydrometrics Inc
5602 Hesper Rd
Billings, MT 59106

Work Order: B14052576

Project Name: Idaho Pole

Energy Laboratories Inc Billings MT received the following 11 samples for Hydrometrics Inc on 5/30/2014 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B14052576-001	IPC-SB-IW1-5 Feet	05/28/14 10:05	05/30/14	Soil	EPH-Ultrasonic Extraction Meoh Extraction for Volatiles EPH Fractionation Hydrocarbons, Aliphatic Extractable Petroleum Hydrocarbons, Aromatic Extractable Petroleum Hydrocarbons, Extractable Petroleum-Scrn Moisture Moisture Prep Percent Moisture
B14052576-002	IPC-SB-IW1-7 Feet	05/28/14 9:45	05/30/14	Soil	Same As Above
B14052576-003	IPC-SB-IW1-23 Feet	05/28/14 10:30	05/30/14	Soil	EPH-Ultrasonic Extraction Meoh Extraction for Volatiles Hydrocarbons, Extractable Petroleum-Scrn Moisture Moisture Prep Percent Moisture
B14052576-004	IPC-SB-IW2A-6 Feet	05/29/14 7:35	05/30/14	Soil	Same As Above
B14052576-005	IPC-SB-IW2A-7.5 Feet	05/29/14 7:30	05/30/14	Soil	EPH-Ultrasonic Extraction Meoh Extraction for Volatiles EPH Fractionation Hydrocarbons, Aliphatic Extractable Petroleum Hydrocarbons, Aromatic Extractable Petroleum Hydrocarbons, Extractable Petroleum-Scrn Moisture Moisture Prep Percent Moisture
B14052576-006	IPC-SB-IW2-19-21 Feet	05/28/14 15:00	05/30/14	Soil	EPH-Ultrasonic Extraction Meoh Extraction for Volatiles Hydrocarbons, Extractable Petroleum-Scrn Moisture Moisture Prep Percent Moisture
B14052576-007	IPC-SB-IW3-6-7 Feet	05/29/14 8:05	05/30/14	Soil	Same As Above
B14052576-008	IPC-SB-IW3-8-9 Feet	05/29/14 9:15	05/30/14	Soil	Same As Above
B14052576-009	IPC-SB-IW3-16 Feet	05/29/14 9:30	05/30/14	Soil	Same As Above

ANALYTICAL SUMMARY REPORT

B14052576-013	IPC-SB-B6-11 Feet	05/29/14 16:15	05/30/14	Soil	EPH-Ultrasonic Extraction Meoh Extraction for Volatiles EPH Fractionation Hydrocarbons, Aliphatic Extractable Petroleum Hydrocarbons, Aromatic Extractable Petroleum Hydrocarbons, Extractable Petroleum-Scrn Moisture Moisture Prep Percent Moisture
B14052576-014	IPC-SB-B6D-11 Feet	05/29/14 16:30	05/30/14	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: Hydrometrics Inc
Project: Idaho Pole
Work Order: B14052576

Report Date: 06/19/14

CASE NARRATIVE

Fractionations without PAHs were added to the following samples per instructions on COC:

B14052576-001	IPC-SB-IW 1-5 Feet
B14052576-002	IPC-SB-IW 1-7 Feet
B14052576-005	IPC-SB-IW2A-7.5 Feet
B14052576-013	IPC-SB-B6-11 Feet
B14052576-014	IPC-SB-B6D-11 Feet

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-001
Client Sample ID: IPC-SB-IW1-5 Feet

Report Date: 06/19/14
Collection Date: 05/28/14 10:05
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	7.5	wt%		0.2		SW3550A	06/02/14 09:27 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	326	mg/kg-dry	*	11	200	SW8015M	06/03/14 12:48 / tmc
Surr: o-Terphenyl	91.0	%REC		40-140		SW8015M	06/03/14 12:48 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	61	mg/kg-dry		11	200	MA-EPH	06/08/14 01:48 / cmb
C19 to C36 Aliphatics	148	mg/kg-dry		11	20000	MA-EPH	06/08/14 01:48 / cmb
Surr: 1-Chloro-octadecane	85.0	%REC		40-140		MA-EPH	06/08/14 01:48 / cmb
C11 to C22 Aromatics	37	mg/kg-dry		11	400	MA-EPH	06/08/14 02:34 / cmb
Total Extractable Hydrocarbons	267	mg/kg-dry		11		MA-EPH	06/08/14 02:34 / cmb
Surr: 2-Bromonaphthalene	90.0	%REC		40-140		MA-EPH	06/08/14 02:34 / cmb
Surr: 2-Fluorobiphenyl	85.0	%REC		40-140		MA-EPH	06/08/14 02:34 / cmb
Surr: o-Terphenyl	84.0	%REC		40-140		MA-EPH	06/08/14 02:34 / cmb
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-002
Client Sample ID: IPC-SB-IW1-7 Feet

Report Date: 06/19/14
Collection Date: 05/28/14 09:45
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	18	wt%		0.2		SW3550A	06/02/14 09:41 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	4550	mg/kg-dry	*	122	200	SW8015M	06/04/14 08:01 / tmc
Surr: o-Terphenyl	267	%REC	S	40-140		SW8015M	06/04/14 08:01 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	911	mg/kg-dry	*	36	200	MA-EPH	06/07/14 19:45 / cmb
C19 to C36 Aliphatics	449	mg/kg-dry		36	20000	MA-EPH	06/07/14 19:45 / cmb
Surr: 1-Chloro-octadecane	80.0	%REC		40-140		MA-EPH	06/07/14 19:45 / cmb
C11 to C22 Aromatics	2540	mg/kg-dry	*	36	400	MA-EPH	06/07/14 20:30 / cmb
Total Extractable Hydrocarbons	3940	mg/kg-dry		36		MA-EPH	06/07/14 20:30 / cmb
Surr: 2-Bromonaphthalene	92.0	%REC		40-140		MA-EPH	06/07/14 20:30 / cmb
Surr: 2-Fluorobiphenyl	86.0	%REC		40-140		MA-EPH	06/07/14 20:30 / cmb
Surr: o-Terphenyl	275	%REC	S	40-140		MA-EPH	06/07/14 20:30 / cmb
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-003
Client Sample ID: IPC-SB-IW1-23 Feet

Report Date: 06/19/14
Collection Date: 05/28/14 10:30
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	10	wt%		0.2		SW3550A	06/02/14 09:48 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	06/03/14 11:16 / tmc
Surr: o-Terphenyl	86.0	%REC		40-140		SW8015M	06/03/14 11:16 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-004
Client Sample ID: IPC-SB-IW2A-6 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 07:35
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	14	wt%		0.2		SW3550A	06/02/14 10:00 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	28	mg/kg-dry		12	200	SW8015M	06/03/14 12:02 / tmc
Surr: o-Terphenyl	81.0	%REC		40-140		SW8015M	06/03/14 12:02 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-005
Client Sample ID: IPC-SB-IW2A-7.5 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 07:30
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	25	wt%		0.2		SW3550A	06/02/14 10:12 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	6560	mg/kg-dry	*	133	200	SW8015M	06/04/14 08:48 / tmc
Surr: o-Terphenyl	347	%REC	S	40-140		SW8015M	06/04/14 08:48 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	1320	mg/kg-dry	*	40	200	MA-EPH	06/07/14 21:16 / cmb
C19 to C36 Aliphatics	580	mg/kg-dry		40	20000	MA-EPH	06/07/14 21:16 / cmb
Surr: 1-Chloro-octadecane	88.0	%REC		40-140		MA-EPH	06/07/14 21:16 / cmb
C11 to C22 Aromatics	3120	mg/kg-dry	*	40	400	MA-EPH	06/07/14 22:01 / cmb
Total Extractable Hydrocarbons	5050	mg/kg-dry		40		MA-EPH	06/07/14 22:01 / cmb
Surr: 2-Bromonaphthalene	79.0	%REC		40-140		MA-EPH	06/07/14 22:01 / cmb
Surr: 2-Fluorobiphenyl	75.0	%REC		40-140		MA-EPH	06/07/14 22:01 / cmb
Surr: o-Terphenyl	274	%REC	S	40-140		MA-EPH	06/07/14 22:01 / cmb
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-006
Client Sample ID: IPC-SB-IW2-19-21 Feet

Report Date: 06/19/14
Collection Date: 05/28/14 15:00
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	9.3	wt%		0.2		SW3550A	06/02/14 10:23 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	06/03/14 14:20 / tmc
Surr: o-Terphenyl	88.0	%REC		40-140		SW8015M	06/03/14 14:20 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-007
Client Sample ID: IPC-SB-IW3-6-7 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 08:05
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	23	wt%		0.2		SW3550A	06/02/14 10:36 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	59	mg/kg-dry		13	200	SW8015M	06/03/14 15:52 / tmc
Surr: o-Terphenyl	68.0	%REC		40-140		SW8015M	06/03/14 15:52 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-008
Client Sample ID: IPC-SB-IW3-8-9 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 09:15
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	16	wt%		0.2		SW3550A	06/02/14 10:47 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	191	mg/kg-dry		12	200	SW8015M	06/03/14 16:38 / tmc
Surr: o-Terphenyl	88.0	%REC		40-140		SW8015M	06/03/14 16:38 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-009
Client Sample ID: IPC-SB-IW3-16 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 09:30
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	7.8	wt%		0.2		SW3550A	06/02/14 11:00 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	06/03/14 15:06 / tmc
Surr: o-Terphenyl	91.0	%REC		40-140		SW8015M	06/03/14 15:06 / tmc

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-013
Client Sample ID: IPC-SB-B6-11 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 16:15
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	23	wt%		0.2		SW3550A	06/02/14 11:05 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	7200	mg/kg-dry	*	130	200	SW8015M	06/04/14 10:21 / tmc
Surr: o-Terphenyl	404	%REC	S	40-140		SW8015M	06/04/14 10:21 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	1620	mg/kg-dry	*	52	200	MA-EPH	06/07/14 22:47 / cmb
C19 to C36 Aliphatics	717	mg/kg-dry		52	20000	MA-EPH	06/07/14 22:47 / cmb
Surr: 1-Chloro-octadecane	72.0	%REC		40-140		MA-EPH	06/07/14 22:47 / cmb
C11 to C22 Aromatics	3350	mg/kg-dry	*	52	400	MA-EPH	06/07/14 23:32 / cmb
Total Extractable Hydrocarbons	5740	mg/kg-dry		52		MA-EPH	06/07/14 23:32 / cmb
Surr: 2-Bromonaphthalene	70.0	%REC		40-140		MA-EPH	06/07/14 23:32 / cmb
Surr: 2-Fluorobiphenyl	74.0	%REC		40-140		MA-EPH	06/07/14 23:32 / cmb
Surr: o-Terphenyl	319	%REC	S	40-140		MA-EPH	06/07/14 23:32 / cmb
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole
Lab ID: B14052576-014
Client Sample ID: IPC-SB-B6D-11 Feet

Report Date: 06/19/14
Collection Date: 05/29/14 16:30
DateReceived: 05/30/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	22	wt%		0.2		SW3550A	06/02/14 11:16 / amn
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	6790	mg/kg-dry	*	128	200	SW8015M	06/04/14 11:08 / tmc
Surr: o-Terphenyl	391	%REC	S	40-140		SW8015M	06/04/14 11:08 / tmc
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							
EXTRACTABLE PETROLEUM HYDROCARBONS							
C9 to C18 Aliphatics	1570	mg/kg-dry	*	51	200	MA-EPH	06/08/14 00:17 / cmb
C19 to C36 Aliphatics	719	mg/kg-dry		51	20000	MA-EPH	06/08/14 00:17 / cmb
Surr: 1-Chloro-octadecane	74.0	%REC		40-140		MA-EPH	06/08/14 00:17 / cmb
C11 to C22 Aromatics	3140	mg/kg-dry	*	51	400	MA-EPH	06/08/14 01:03 / cmb
Total Extractable Hydrocarbons	5480	mg/kg-dry		51		MA-EPH	06/08/14 01:03 / cmb
Surr: 2-Bromonaphthalene	69.0	%REC		40-140		MA-EPH	06/08/14 01:03 / cmb
Surr: 2-Fluorobiphenyl	73.0	%REC		40-140		MA-EPH	06/08/14 01:03 / cmb
Surr: o-Terphenyl	313	%REC	S	40-140		MA-EPH	06/08/14 01:03 / cmb
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							
- *=The reported value exceeds the Maximum Contaminant Limit (MCL). The MCLs listed for target analyte and hydrocarbon range values are the most conservative Montana DEQ RBSLs. These limits may not apply to your samples.							
- S=Surrogate recovery outside QC advisory limits due to positive sample matrix interference.							

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
* - The result exceeds the MCL.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole

Report Date: 06/19/14
Work Order: B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Batch: 80228
Lab ID: LCS-80228	Laboratory Control Sample				Run: GCFID-HP3-B_140601D				06/02/14 22:13
Total Extractable Hydrocarbons	194	mg/kg	10	95	60	140			
Surr: o-Terphenyl			0.17	93	40	140			
Lab ID: MB-80228	Method Blank				Run: GCFID-HP3-B_140601D				06/02/14 22:59
Total Extractable Hydrocarbons	ND	mg/kg	10						
Surr: o-Terphenyl			0.17	90	40	140			
Lab ID: B14052558-001AMS	Sample Duplicate				Run: GCFID-HP3-B_140601D				06/03/14 00:31
Total Extractable Hydrocarbons	3010	mg/kg-dry	11		60	140	15	20	
Surr: o-Terphenyl			0.19	77	40	140			
Lab ID: B14052558-001AMSD	Sample Duplicate				Run: GCFID-HP3-B_140601D				06/03/14 01:17
Total Extractable Hydrocarbons	3920	mg/kg-dry	11		60	140	11	20	
Surr: o-Terphenyl			0.19	83	40	140			

- Because the sample amount was significantly higher than the spike amount, the MS and MSD spike samples are calculated as Duplicate samples based on the spike amount added plus the original sample concentration.

Method: SW8015M									Analytical Run: R224849
Lab ID: CCV_0601HP346r-S	Continuing Calibration Verification Standard								06/03/14 07:25
n-Nonane	6.90	mg/kg		104	75	125			
n-Decane	6.86	mg/kg		103	75	125			
n-Dodecane	6.79	mg/kg		102	75	125			
n-Tetradecane	6.70	mg/kg		101	75	125			
n-Hexadecane	6.79	mg/kg		102	75	125			
n-Octadecane	6.81	mg/kg		102	75	125			
n-Nonadecane	6.83	mg/kg		102	75	125			
n-Eicosane	6.81	mg/kg		102	75	125			
n-Docosane	6.80	mg/kg		102	75	125			
n-Tetracosane	6.83	mg/kg		102	75	125			
n-Hexacosane	6.85	mg/kg		103	75	125			
n-Octacosane	6.82	mg/kg		102	75	125			
n-Triacontane	6.87	mg/kg		103	75	125			
n-Hexatriacontane	6.86	mg/kg		103	75	125			
Surr: o-Terphenyl			0.17	105	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole

Report Date: 06/19/14
Work Order: B14052576

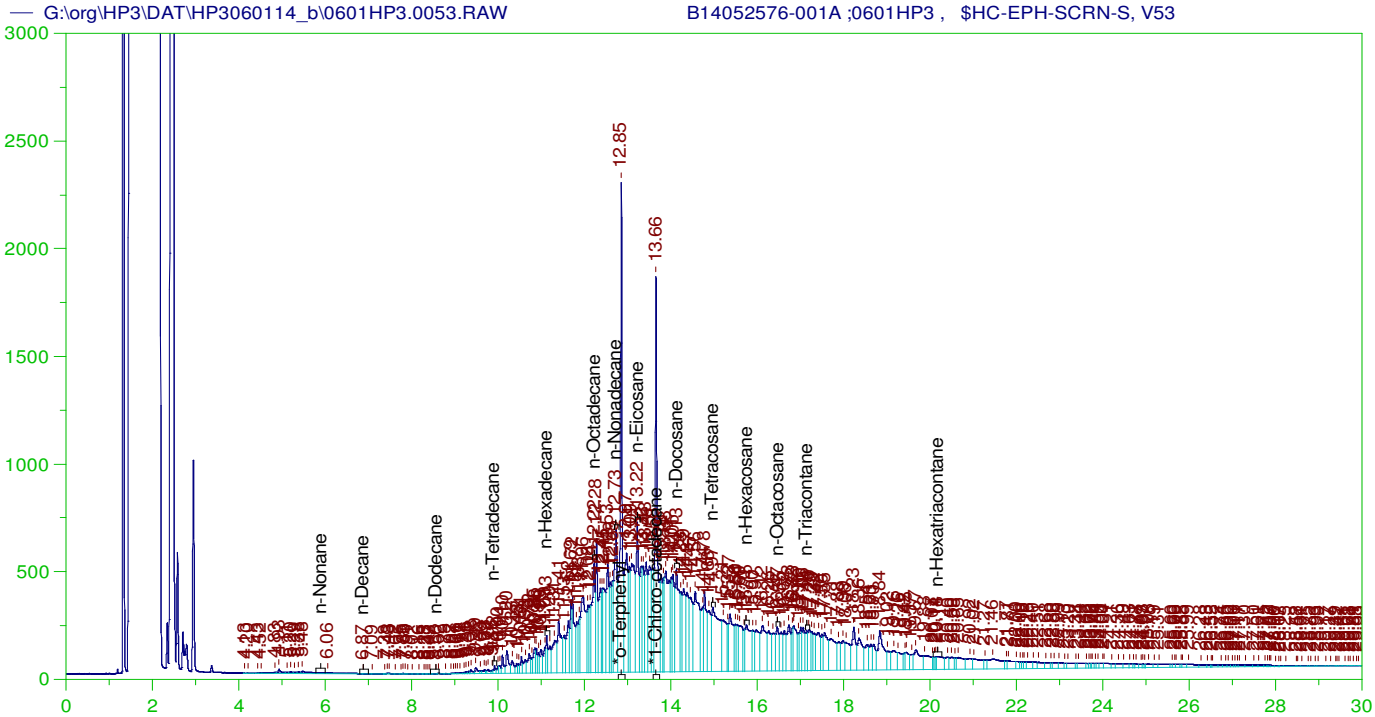
Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M									Analytical Run: R224899
Lab ID: CCV_0601HP369r-S	Continuing Calibration Verification Standard								06/04/14 02:37
n-Nonane	6.91	mg/kg		104	75	125			
n-Decane	6.80	mg/kg		102	75	125			
n-Dodecane	6.84	mg/kg		103	75	125			
n-Tetradecane	6.76	mg/kg		101	75	125			
n-Hexadecane	6.84	mg/kg		103	75	125			
n-Octadecane	6.86	mg/kg		103	75	125			
n-Nonadecane	6.89	mg/kg		103	75	125			
n-Eicosane	6.86	mg/kg		103	75	125			
n-Docosane	6.85	mg/kg		103	75	125			
n-Tetracosane	6.87	mg/kg		103	75	125			
n-Hexacosane	6.89	mg/kg		103	75	125			
n-Octacosane	6.86	mg/kg		103	75	125			
n-Triacontane	6.90	mg/kg		104	75	125			
n-Hexatriacontane	6.88	mg/kg		103	75	125			
Surr: o-Terphenyl			0.17	105	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

IPC-SB-IW1-5 Feet Batch ID: 80228



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-001A ;0601HP3 , $HC-EPH-SCRN-S, V53
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0053.RAW
Date & Time Acquired: 6/3/2014 12:48:07 PM
Method File: g:\org\HP3\Methods\S3000JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

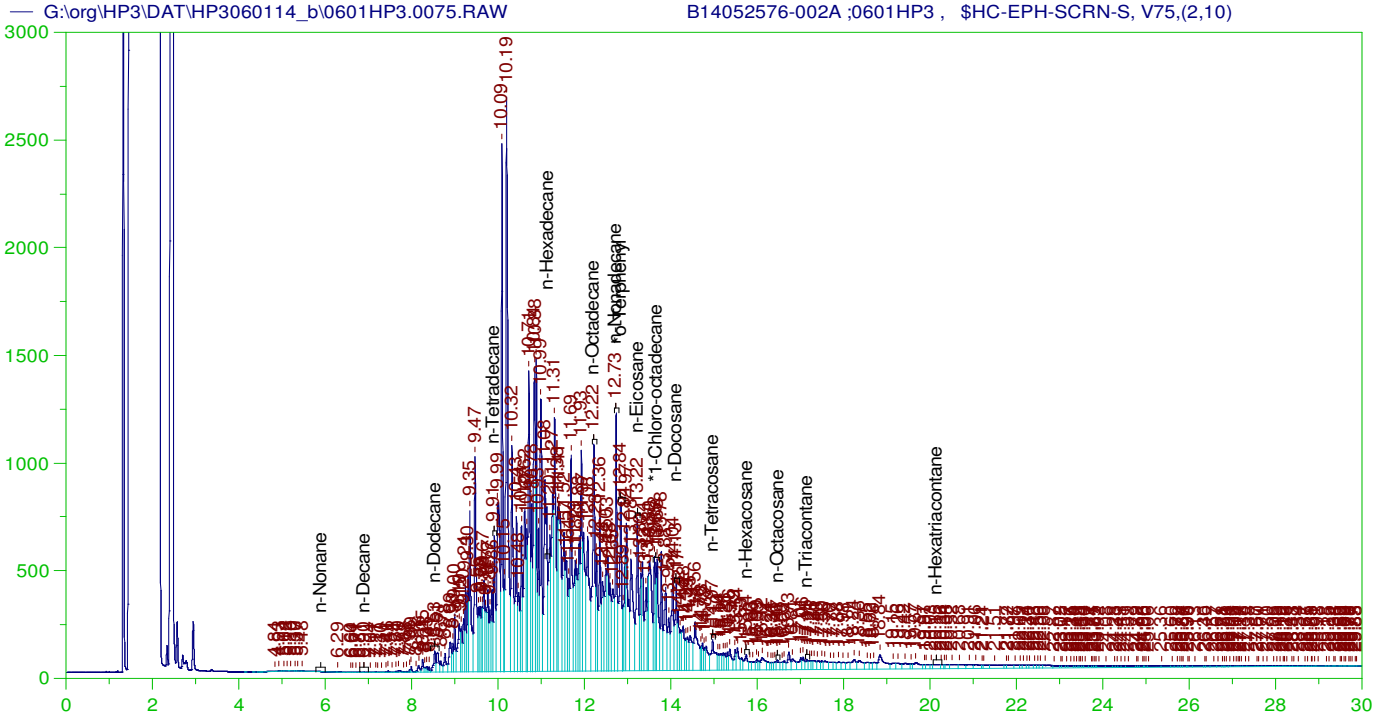
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.85	6.667	12.741	191.12	-
*1-Chloro-octadecane	13.656	6.667	17.104	256.57	-

DRO Area:1.08669E+08 DRO Amount: 233.7935
TEH Area:1.403636E+08 TEH Amount: 301.9823
C9-C18 Area:3.481878E+07 C9-C18 Amount: 74.92848
C19-C36 Area:9.393722E+07C19-C36 Amount: 202.0498

IPC-SB-IW1-7 Feet Batch ID: 80228

G:\org\HP3\DAT\HP3060114_b\0601HP3.0075.RAW B14052576-002A ;0601HP3 , $HC-EPH-SCRN-S, V75,(2,10)



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

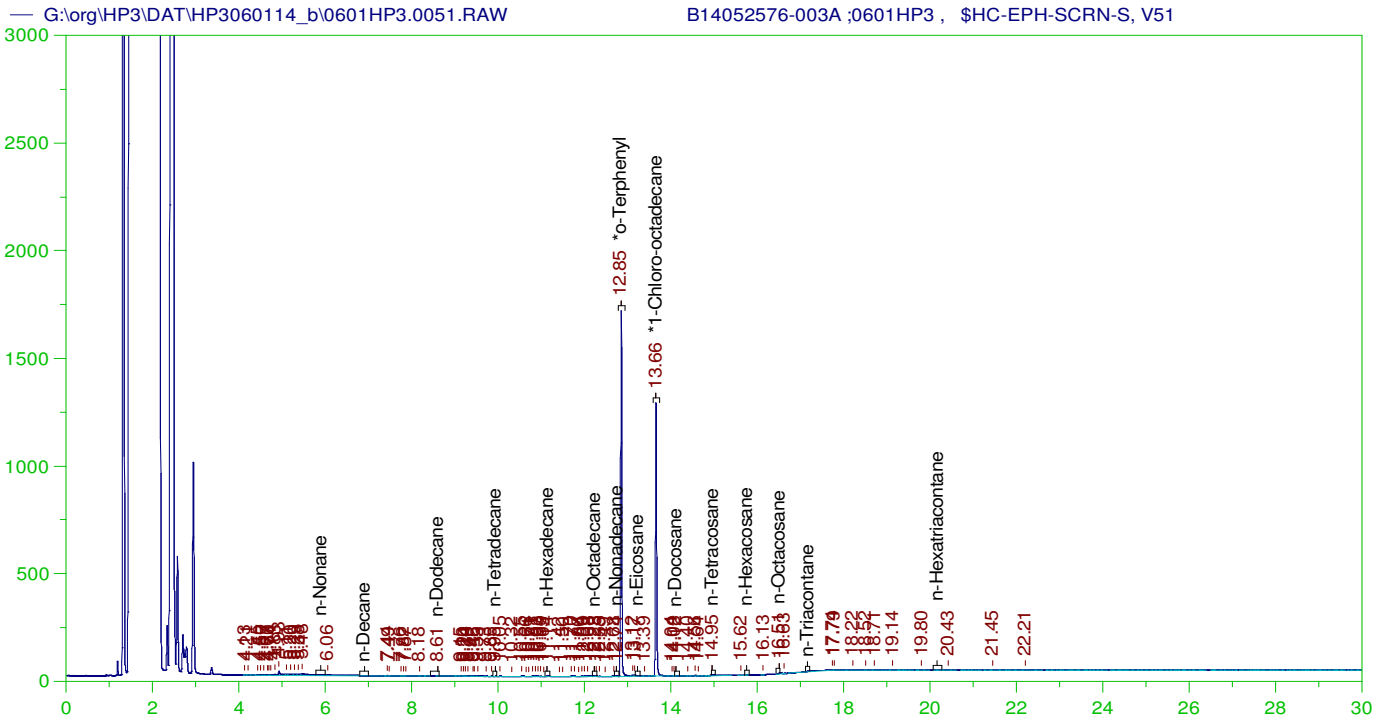
Sample Name: B14052576-002A ;0601HP3 , $HC-EPH-SCRN-S, V75,(2,10)
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0075.RAW
Date & Time Acquired: 6/4/2014 8:01:48 AM
Method File: g:\org\HP3\Methods\SR060175JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 20 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.839	6.667	50.024	750.37	-
*1-Chloro-octadecane	13.652	6.667	21.964	329.46	-

DRO Area:1.640202E+08 DRO Amount: 3528.778
TEH Area:1.740019E+08 TEH Amount: 3743.528
C9-C18 Area:1.24432E+08 C9-C18 Amount: 2677.721
C19-C36 Area:4.50892E+07 C19-C36 Amount: 969.8246

IPC-SB-IW1-23 Feet Batch ID: 80228



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-003A ;0601HP3 , $HC-EPH-SCRN-S, V51
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0051.RAW
Date & Time Acquired: 6/3/2014 11:16:18 AM
Method File: g:\org\HP3\Methods\SR000JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.85	6.667	5.704	85.55	-
*1-Chloro-octadecane	13.657	6.667	6.265	93.97	-

DRO Area:232082 DRO Amount: 0.4993079
TEH Area:810127 TEH Amount: 1.742931
C9-C18 Area:174530.9 C9-C18 Amount: 0.3755828
C19-C36 Area:224746.5 C19-C36 Amount: 0.4834077

IPC-SB-IW2A-6 Feet Batch ID: 80228

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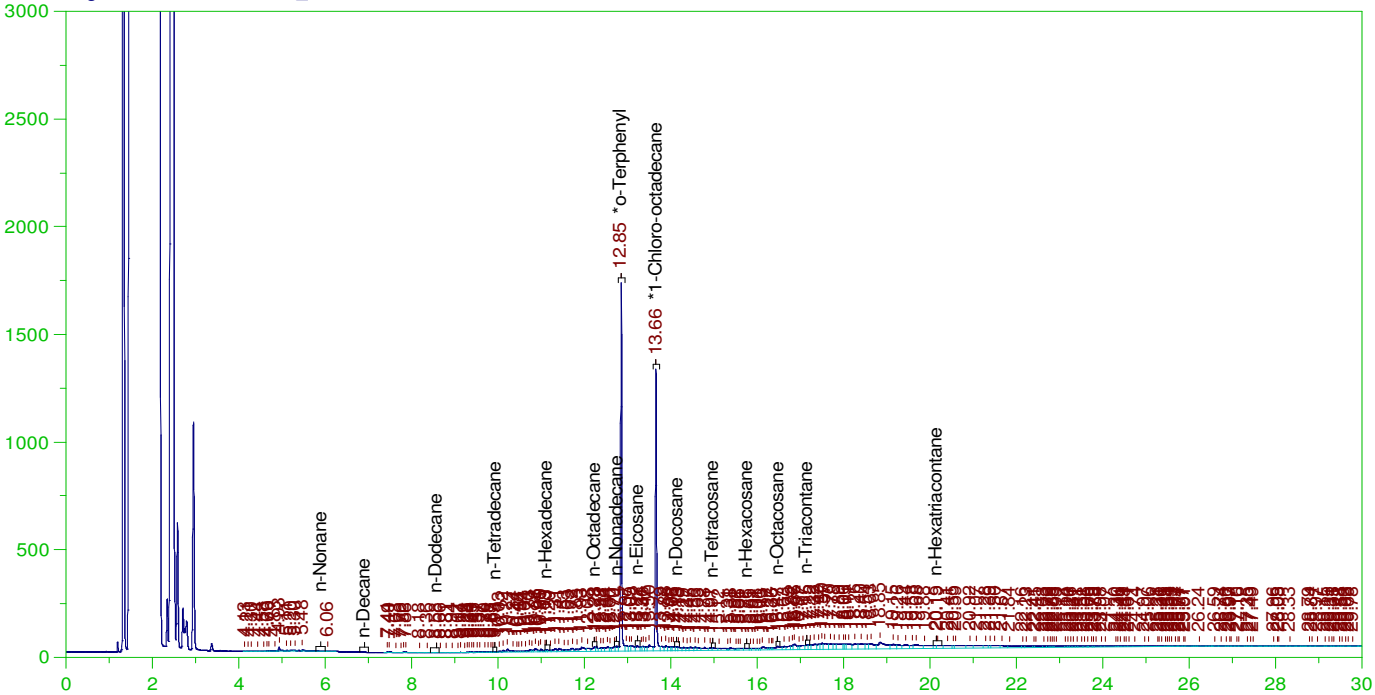

EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-004A ;0601HP3 , $HC-EPH-SCRN-S, V52
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0052.RAW
Date & Time Acquired: 6/3/2014 12:02:16 PM
Method File: g:\org\HP3\Methods\SR060152JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.849	6.667	5.76	86.39	-
*1-Chloro-octadecane	13.655	6.667	6.475	97.12	-

DRO Area:5278290 DRO Amount: 11.35587
TEH Area:1.125214E+07 TEH Amount: 24.20818
C9-C18 Area:1934768 C9-C18 Amount: 4.163536
C19-C36 Area:7102966 C19-C36 Amount: 15.27779

IPC-SB-IW2A-7.5 Feet Batch ID: 80228

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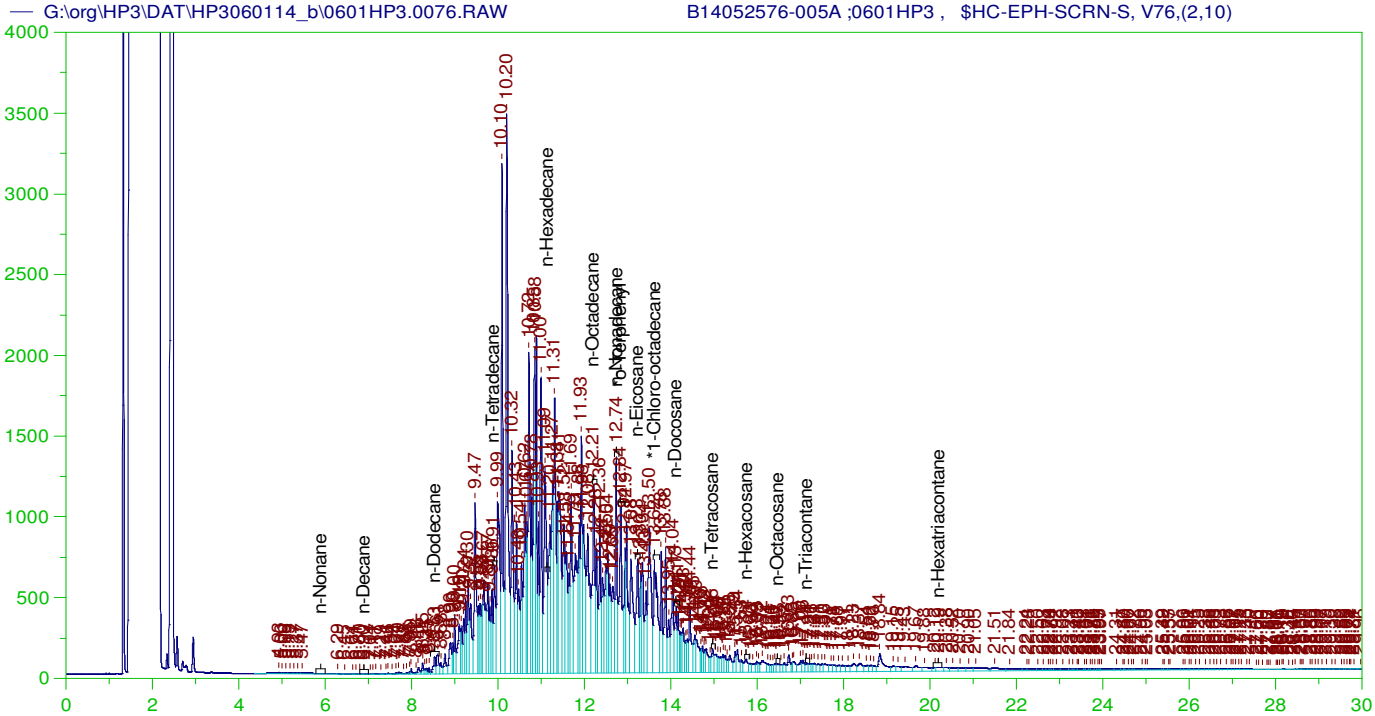

EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-005A ;0601HP3 , $HC-EPH-SCRN-S, V76,(2,10)
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0076.RAW
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Method File: g:\org\HP3\Methods\S3060176JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 20 S.A.: 1

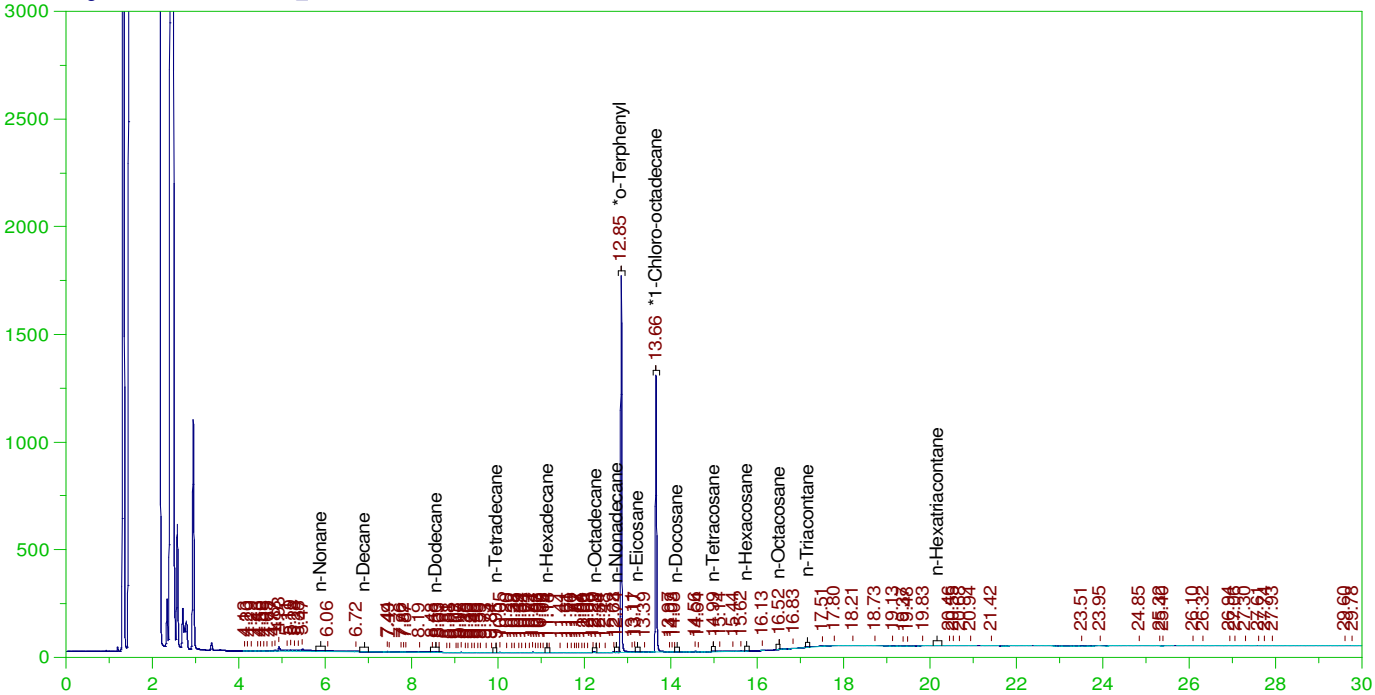
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.839	6.667	85.001	1275.01	-
*1-Chloro-octadecane	13.618	6.667	111.881	1678.21	-

DRO Area:2.169857E+08 DRO Amount: 4668.292
TEH Area:2.286048E+08 TEH Amount: 4918.269
C9-C18 Area:1.688578E+08 C9-C18 Amount: 3633.746
C19-C36 Area:5.478998E+07C19-C36 Amount: 1178.479

IPC-SB-IW2-19-21 Feet Batch ID: 80228

G:\org\HP3\DAT\HP3060114_b\0601HP3.0055.RAW B14052576-006A ;0601HP3 , $HC-EPH-SCRN-S, V55



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-006A ;0601HP3 , $HC-EPH-SCRN-S, V55
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0055.RAW
Date & Time Acquired: 6/3/2014 2:20:03 PM
Method File: g:\org\HP3\Methods\SR000JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

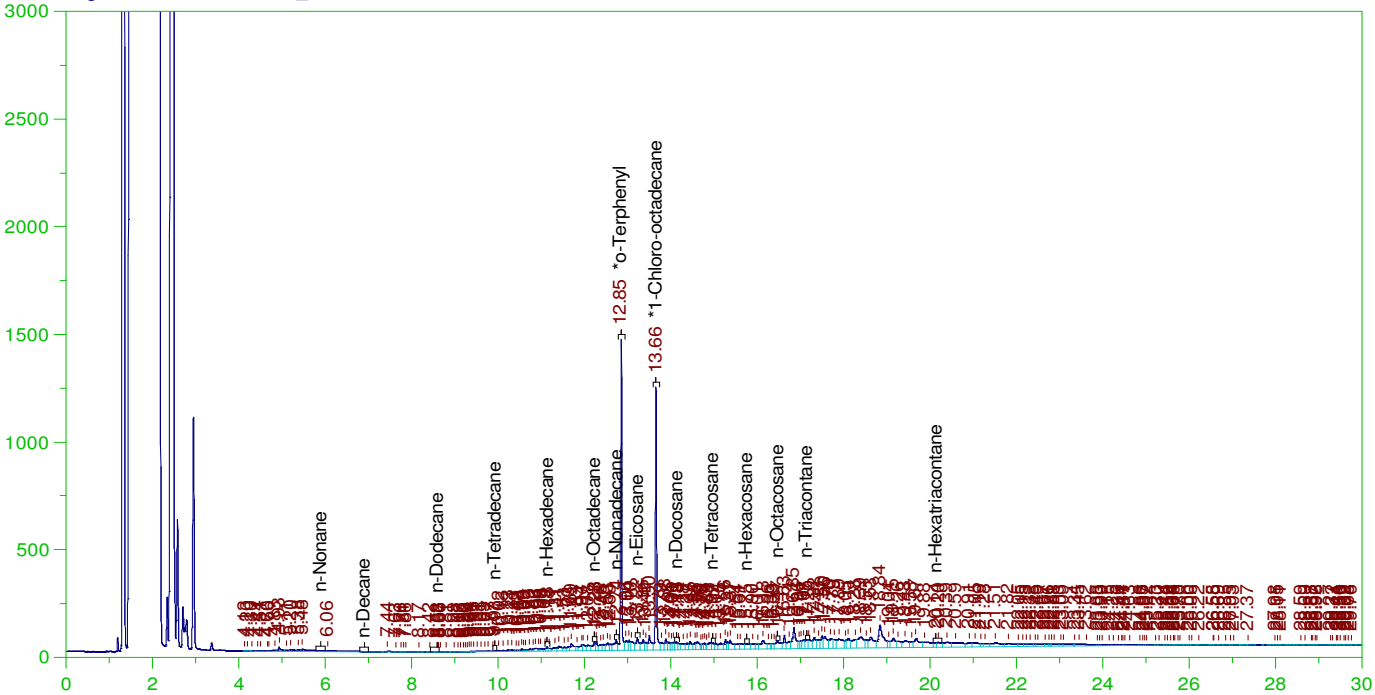
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.849	6.667	5.87	88.04	-
*1-Chloro-octadecane	13.656	6.667	6.445	96.67	-

DRO Area:266231.5 DRO Amount: 0.5727781
TEH Area:884433.5 TEH Amount: 1.902796
C9-C18 Area:262720.4 C9-C18 Amount: 0.5653626
C19-C36 Area:149658.5 C19-C36 Amount: 0.3219008

IPC-SB-IW3-6-7 Feet Batch ID: 80228

— G:\org\HP3\DAT\HP3060114_b\0601HP3.0057.RAW B14052576-007A ;0601HP3 , $HC-EPH-SCRN-S, V57



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-007A ;0601HP3 , $HC-EPH-SCRN-S, V57
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0057.RAW
Date & Time Acquired: 6/3/2014 3:52:29 PM
Method File: g:\org\HP3\Methods\SR060157JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

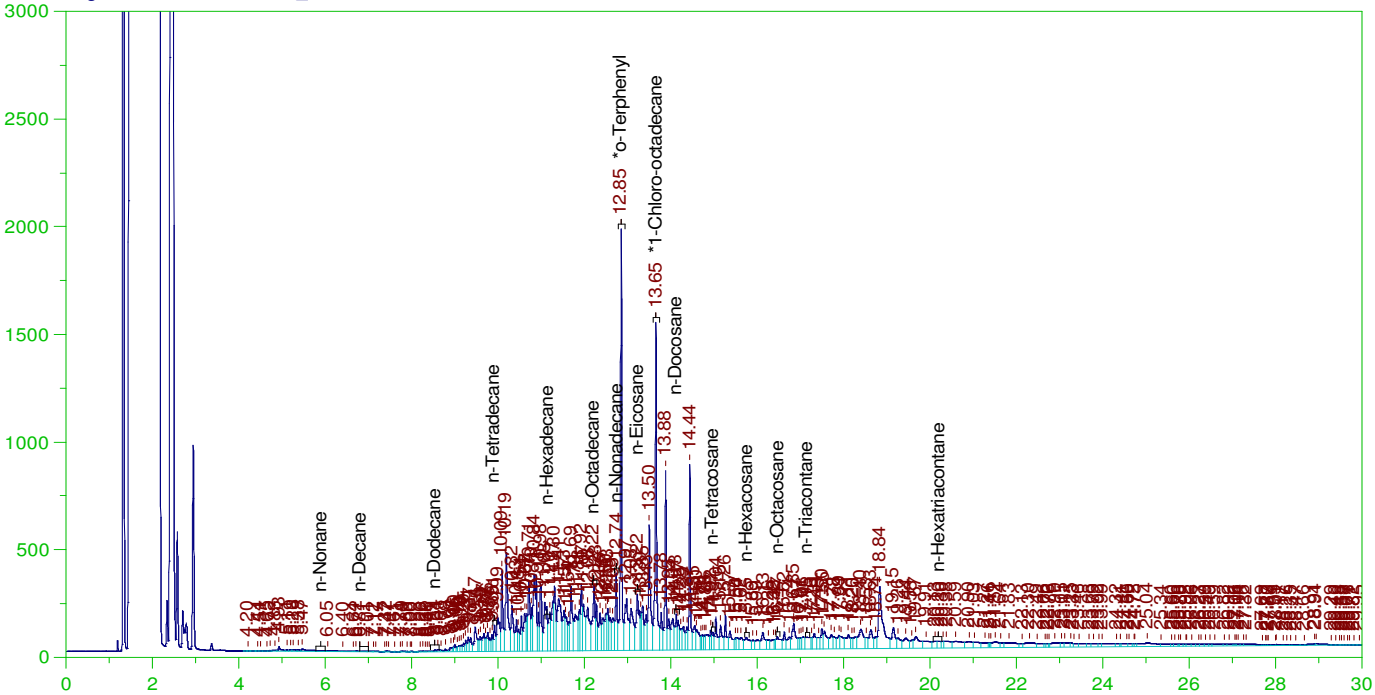
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.849	6.667	5.099	76.49	-
*1-Chloro-octadecane	13.655	6.667	6.302	94.54	-

DRO Area:1.113068E+07 DRO Amount: 23.94686
TEH Area:2.113732E+07 TEH Amount: 45.47544
C9-C18 Area:3191768 C9-C18 Amount: 6.868542
C19-C36 Area:1.454507E+07C19-C36 Amount: 31.28501

IPC-SB-IW3-8-9 Feet Batch ID: 80228

G:\org\HP3\DAT\HP3060114_b\0601HP3.0058.RAW B14052576-008A ;0601HP3 , $HC-EPH-SCRN-S, V58



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

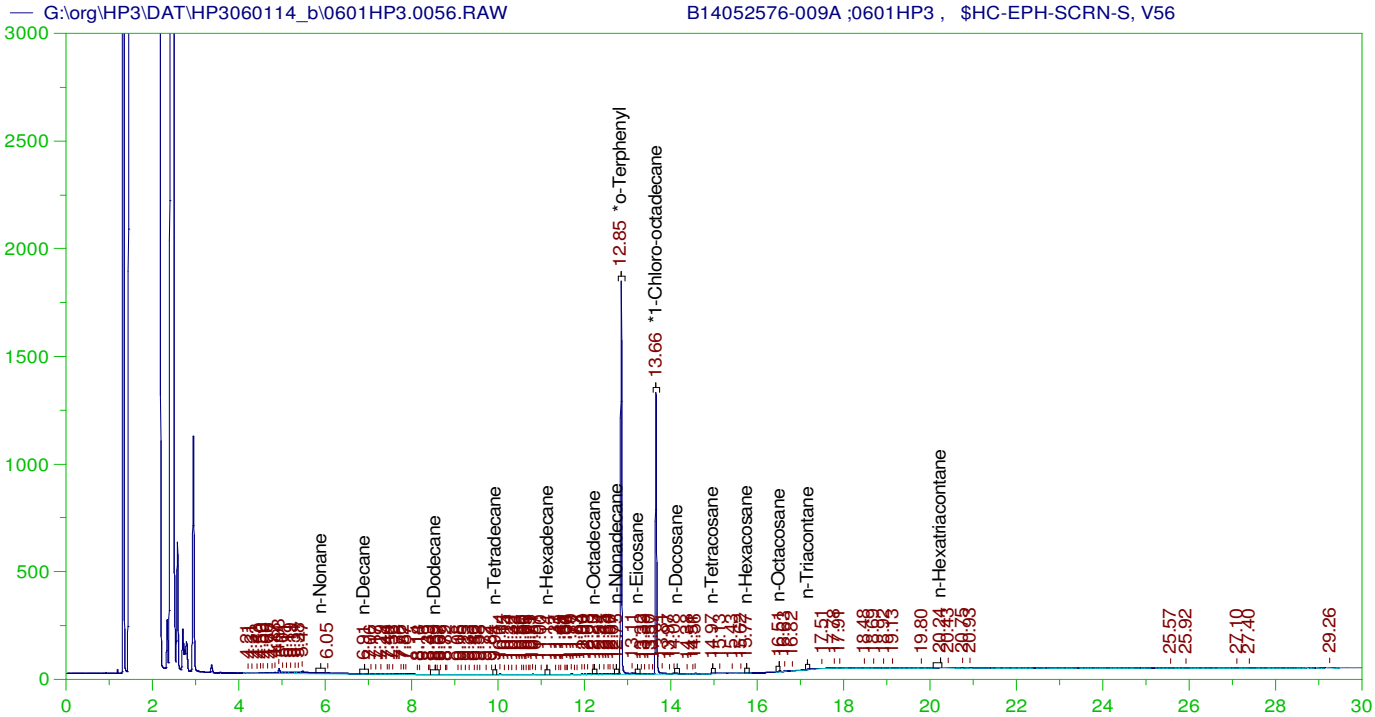
Sample Name: B14052576-008A ;0601HP3 , $HC-EPH-SCRN-S, V58
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0058.RAW
Date & Time Acquired: 6/3/2014 4:38:50 PM
Method File: g:\org\HP3\Methods\S3000JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.848	6.667	7.743	116.15	-
*1-Chloro-octadecane	13.654	6.667	9.922	148.83	-

DRO Area:5.695189E+07 DRO Amount: 122.5279
TEH Area:7.437805E+07 TEH Amount: 160.0191
C9-C18 Area:3.262535E+07 C9-C18 Amount: 70.20831
C19-C36 Area:3.449438E+07C19-C36 Amount: 74.19403

IPC-SB-IW3-16 Feet Batch ID: 80228



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-009A ;0601HP3 , $HC-EPH-SCRN-S, V56
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0056.RAW
Date & Time Acquired: 6/3/2014 3:06:22 PM
Method File: g:\org\HP3\Methods\SR000JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

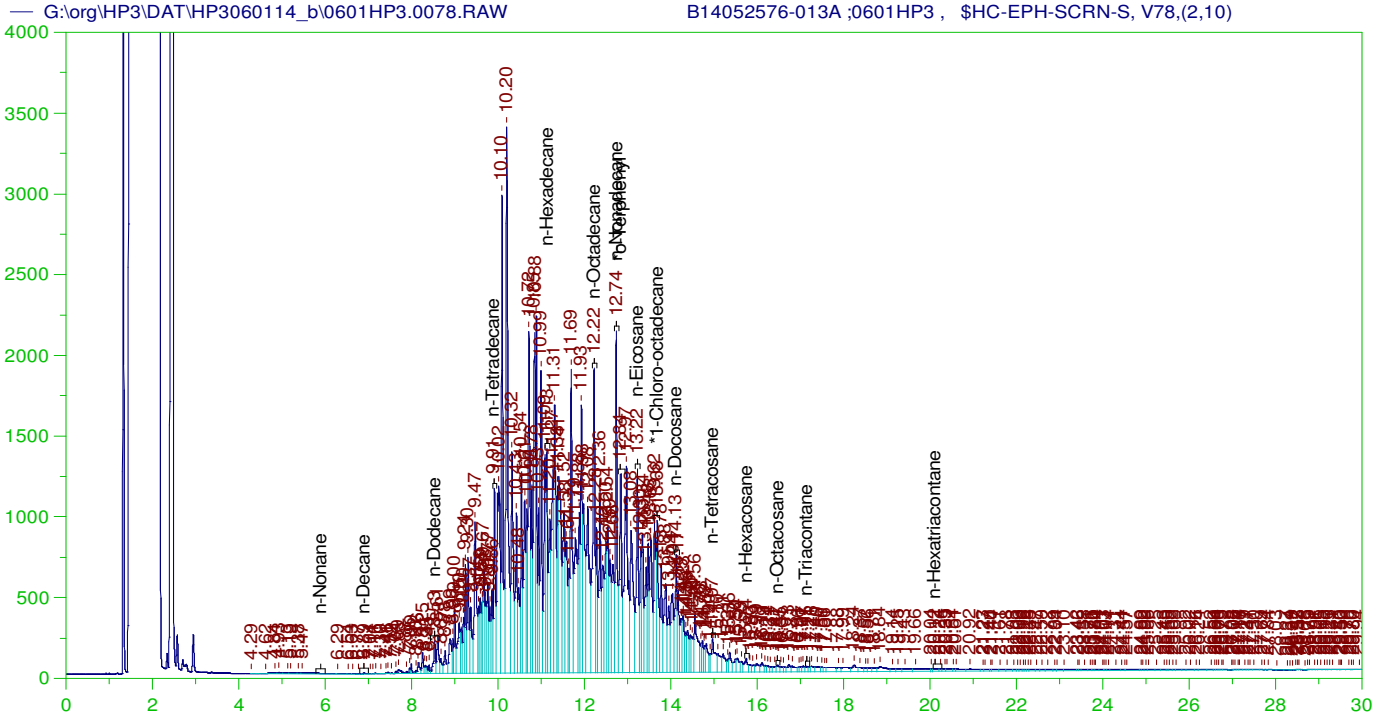
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.849	6.667	6.065	90.97	-
*1-Chloro-octadecane	13.656	6.667	6.458	96.87	-

DRO Area:341212 DRO Amount: 0.7340934
TEH Area:989501.5 TEH Amount: 2.128842
C9-C18 Area:263227.9 C9-C18 Amount: 0.5664547
C19-C36 Area:223535.5 C19-C36 Amount: 0.480803

IPC-SB-B6-11 Feet Batch ID: 80228

G:\org\HP3\DAT\HP3060114_b\0601HP3.0078.RAW B14052576-013A ;0601HP3 , $HC-EPH-SCRN-S, V78,(2,10)



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-013A ;0601HP3 , $HC-EPH-SCRN-S, V78,(2,10)
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0078.RAW
Date & Time Acquired: 6/4/2014 10:21:26 AM
Method File: g:\org\HP3\Methods\S3060176JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 20 S.A.: 1

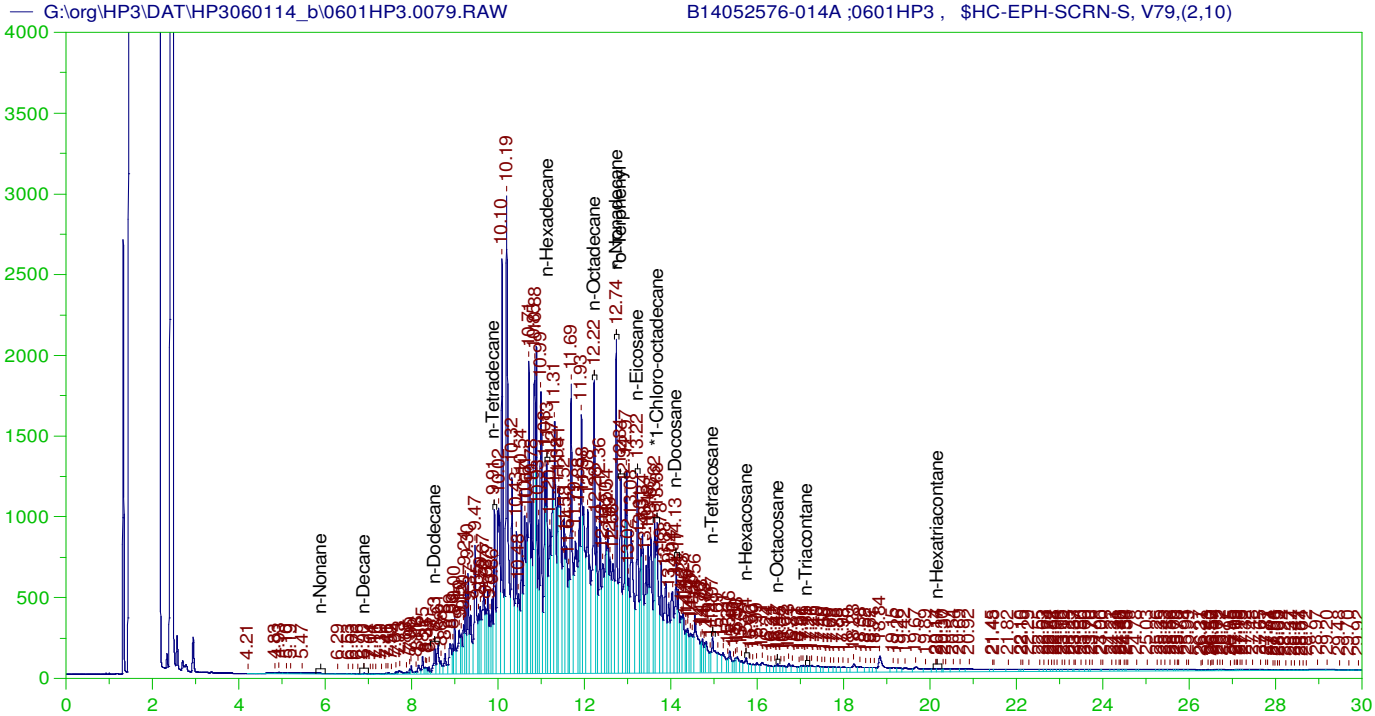
Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.84	6.667	78.951	1184.26	-
*1-Chloro-octadecane	13.684	6.667	73.561	1103.41	-

DRO Area:2.484548E+08 DRO Amount: 5345.329
TEH Area:2.567046E+08 TEH Amount: 5522.818
C9-C18 Area:1.882533E+08 C9-C18 Amount: 4051.128
C19-C36 Area:6.433179E+07C19-C36 Amount: 1383.714

IPC-SB-B6D-11 Feet Batch ID: 80228

G:\org\HP3\DAT\HP3060114_b\0601HP3.0079.RAW B14052576-014A ;0601HP3 , $HC-EPH-SCRN-S, V79,(2,10)



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B14052576-014A ;0601HP3 , $HC-EPH-SCRN-S, V79,(2,10)
Raw File: G:\org\HP3\DAT\HP3060114_b\0601HP3.0079.RAW
Date & Time Acquired: 6/4/2014 11:08:07 AM
Method File: g:\org\HP3\Methods\S3060176JK-L%.met
Calibration File: G:\Org\HP3\Cals\SC140226JK.CAL
Sample Weight: 30 Dilution: 20 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 30979.57
Mean RF for C19 to C36 Hydrocarbons: 30994.75
Mean RF for Total Extractable Hydrocarbons: 30987.16
Rt range for Diesel Range Organics: 6.805 to 17.214
Rt range for C9 to C18 Hydrocarbons: 5.795 to 12.793
Rt range for C19 to C36 Hydrocarbons: 12.828 to 20.269

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.84	6.667	80.25	1203.75	-
*1-Chloro-octadecane	13.685	6.667	108.04	1620.59	-

DRO Area:2.370091E+08 DRO Amount: 5099.082
TEH Area:2.465258E+08 TEH Amount: 5303.827
C9-C18 Area:1.759219E+08 C9-C18 Amount: 3785.76
C19-C36 Area:6.61637E+07 C19-C36 Amount: 1423.116

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole

Report Date: 06/19/14
Work Order: B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 80294
Lab ID: LCS-80294-80228	Laboratory Control Sample				Run: GCFID-HP3-B_140606C				06/07/14 06:56
C9 to C18 Aliphatics	31.1	mg/kg	10	78	40	140			
C19 to C36 Aliphatics	56.6	mg/kg	10	106	40	140			
n-Nonane	3.09	mg/kg	0.17	46	30	140			
n-Decane	3.94	mg/kg	0.17	59	40	140			
n-Dodecane	4.71	mg/kg	0.17	71	40	140			
n-Tetradecane	5.37	mg/kg	0.17	81	40	140			
n-Hexadecane	5.98	mg/kg	0.17	90	40	140			
n-Octadecane	6.75	mg/kg	0.17	101	40	140			
n-Nonadecane	7.19	mg/kg	0.17	108	40	140			
n-Eicosane	6.73	mg/kg	0.17	101	40	140			
n-Docosane	7.10	mg/kg	0.17	106	40	140			
n-Tetracosane	7.18	mg/kg	0.17	108	40	140			
n-Hexacosane	7.16	mg/kg	0.17	107	40	140			
n-Octacosane	6.54	mg/kg	0.17	98	40	140			
n-Triacontane	7.15	mg/kg	0.17	107	40	140			
n-Hexatriacontane	6.90	mg/kg	0.17	104	40	140			
Surr: 1-Chloro-octadecane			0.17	102	40	140			
Lab ID: MB-80294-80228	Method Blank				Run: GCFID-HP3-B_140606C				06/07/14 08:27
C9 to C18 Aliphatics	ND	mg/kg	10						
C19 to C36 Aliphatics	ND	mg/kg	10						
Surr: 1-Chloro-octadecane			0.17	95	40	140			
Lab ID: B14052558-001AMS	Sample Duplicate				Run: GCFID-HP3-B_140606C				06/07/14 11:28
C9 to C18 Aliphatics	1490	mg/kg-dry	22				8.0	20	
C19 to C36 Aliphatics	586	mg/kg-dry	22				19	20	
n-Dodecane	17.6	mg/kg-dry	0.37				24	20	R
n-Tetradecane	32.0	mg/kg-dry	0.37				12	20	
n-Hexadecane	31.2	mg/kg-dry	0.37				8.5	20	
n-Octadecane	22.1	mg/kg-dry	0.37				6.8	20	
n-Nonadecane	24.7	mg/kg-dry	0.37				4.5	20	
n-Eicosane	20.6	mg/kg-dry	0.37				7.4	20	
- Because the sample amount was significantly higher than the spike amount for some analytes, the MS and MSD spike samples are calculated as Duplicate samples based on the spike amount added plus the original sample concentration for those analytes.									
Lab ID: B14052558-001AMS	Sample Matrix Spike				Run: GCFID-HP3-B_140606C				06/07/14 11:28
n-Nonane	2.92	mg/kg-dry	0.37	39	30	140			
n-Decane	4.75	mg/kg-dry	0.37	47	40	140			
n-Docosane	14.6	mg/kg-dry	0.37	90	40	140			
n-Tetracosane	9.03	mg/kg-dry	0.37	96	40	140			
n-Hexacosane	7.65	mg/kg-dry	0.37	97	40	140			
n-Octacosane	6.73	mg/kg-dry	0.37	90	40	140			
n-Triacontane	7.39	mg/kg-dry	0.37	99	40	140			
n-Hexatriacontane	7.40	mg/kg-dry	0.37	99	40	140			
Surr: 1-Chloro-octadecane			0.37	91	40	140			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole

Report Date: 06/19/14
Work Order: B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 80294
Lab ID: B14052558-001AMS	Sample Matrix Spike				Run: GCFID-HP3-B_140606C			06/07/14 11:28	
Lab ID: B14052558-001AMSD	Sample Duplicate				Run: GCFID-HP3-B_140606C			06/07/14 12:58	
C9 to C18 Aliphatics	1820	mg/kg-dry	22				28	20	R
C19 to C36 Aliphatics	655	mg/kg-dry	22				7.6	20	
n-Dodecane	21.5	mg/kg-dry	0.37				3.6	20	
n-Tetradecane	37.8	mg/kg-dry	0.37				4.7	20	
n-Hexadecane	34.6	mg/kg-dry	0.37				19	20	
n-Octadecane	23.1	mg/kg-dry	0.37				2.3	20	
n-Nonadecane	25.9	mg/kg-dry	0.37				0.0	20	
n-Eicosane	21.5	mg/kg-dry	0.37				2.8	20	
- Because the sample amount was significantly higher than the spike amount for some analytes, the MS and MSD spike samples are calculated as Duplicate samples based on the spike amount added plus the original sample concentration for those analytes.									
Lab ID: B14052558-001AMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_140606C			06/07/14 12:58	
n-Nonane	2.85	mg/kg-dry	0.37	38	30	140	2.3	30	
n-Decane	5.27	mg/kg-dry	0.37	54	40	140	10	20	
n-Docosane	14.5	mg/kg-dry	0.37	89	40	140	0.4	20	
n-Tetracosane	8.22	mg/kg-dry	0.37	85	40	140	9.4	20	
n-Hexacosane	6.69	mg/kg-dry	0.37	85	40	140	13	20	
n-Octacosane	5.84	mg/kg-dry	0.37	78	40	140	14	20	
n-Triacontane	6.41	mg/kg-dry	0.37	86	40	140	14	20	
n-Hexatriacontane	6.36	mg/kg-dry	0.37	86	40	140	15	20	
Surr: 1-Chloro-octadecane			0.37	78	40	140			
Lab ID: LCS-80294-80228	Laboratory Control Sample				Run: GCFID-HP3-B_140606C			06/07/14 07:41	
C11 to C22 Aromatics	110	mg/kg	10	97	40	140			
Total Extractable Hydrocarbons	198	mg/kg	10	96	40	140			
Naphthalene	3.39	mg/kg	0.17	51	40	140			
2-MethylNaphthalene	4.30	mg/kg	0.17	64	40	140			
Acenaphthylene	4.70	mg/kg	0.17	70	40	140			
Acenaphthene	4.98	mg/kg	0.17	75	40	140			
Fluorene	5.88	mg/kg	0.17	88	40	140			
Phenanthrene	6.67	mg/kg	0.17	100	40	140			
Anthracene	6.66	mg/kg	0.17	100	40	140			
Fluoranthene	7.01	mg/kg	0.17	105	40	140			
Pyrene	7.13	mg/kg	0.17	107	40	140			
Benzo(a)Anthracene	7.09	mg/kg	0.17	106	40	140			
Chrysene	7.33	mg/kg	0.17	110	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	14.4	mg/kg	0.17	108	40	140			
Benzo(a)Pyrene	7.38	mg/kg	0.17	111	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	14.2	mg/kg	0.17	107	40	140			
Benzo(g,h,I)perylene	6.97	mg/kg	0.17	105	40	140			
Surr: 2-Bromonaphthalene			0.17	88	40	140			
Surr: 2-Fluorobiphenyl			0.17	83	40	140			
Surr: o-Terphenyl			0.17	101	40	140			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc **Report Date:** 06/19/14

Project: Idaho Pole **Work Order:** B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 80294
Lab ID: LCS-80294-80228	Laboratory Control Sample				Run: GCFID-HP3-B_140606C				06/07/14 07:41
Lab ID: MB-80294-80228	Method Blank				Run: GCFID-HP3-B_140606C				06/07/14 09:12
C11 to C22 Aromatics	ND	mg/kg	10						
Total Extractable Hydrocarbons	ND	mg/kg	10						
Naphthalene	ND	mg/kg	0.17						
2-MethylNaphthalene	ND	mg/kg	0.17						
Acenaphthylene	ND	mg/kg	0.17						
Acenaphthene	ND	mg/kg	0.17						
Fluorene	ND	mg/kg	0.17						
Phenanthrene	ND	mg/kg	0.17						
Anthracene	ND	mg/kg	0.17						
Fluoranthene	ND	mg/kg	0.17						
Pyrene	ND	mg/kg	0.17						
Benzo(a)Anthracene	ND	mg/kg	0.17						
Chrysene	ND	mg/kg	0.17						
Benzo(b)Fluoranthene/Benzo(k)Fluoran	ND	mg/kg	0.17						
Benzo(a)Pyrene	ND	mg/kg	0.17						
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	ND	mg/kg	0.17						
Benzo(g,h,I)perylene	ND	mg/kg	0.17						
Surr: 2-Bromonaphthalene			0.17	90	40	140			
Surr: 2-Fluorobiphenyl			0.17	88	40	140			
Surr: o-Terphenyl			0.17	94	40	140			
Lab ID: B14052558-001AMS	Sample Duplicate				Run: GCFID-HP3-B_140606C				06/07/14 12:13
C11 to C22 Aromatics	898	mg/kg-dry	22				2.7	20	
Total Extractable Hydrocarbons	2980	mg/kg-dry	22				4.4	20	
- Because the sample amount was significantly higher than the spike amount for some analytes, the MS and MSD spike samples are calculated as Duplicate samples based on the spike amount added plus the original sample concentration for those analytes.									
Lab ID: B14052558-001AMS	Sample Matrix Spike				Run: GCFID-HP3-B_140606C				06/07/14 12:13
Naphthalene	5.78	mg/kg-dry	0.37	60	40	140			
2-MethylNaphthalene	10.8	mg/kg-dry	0.37	58	40	140			
Acenaphthylene	6.42	mg/kg-dry	0.37	59	40	140			
Acenaphthene	6.35	mg/kg-dry	0.37	79	40	140			
Fluorene	8.38	mg/kg-dry	0.37	92	40	140			
Phenanthrene	7.45	mg/kg-dry	0.37	97	40	140			
Anthracene	8.09	mg/kg-dry	0.37	106	40	140			
Fluoranthene	8.04	mg/kg-dry	0.37	108	40	140			
Pyrene	8.82	mg/kg-dry	0.37	106	40	140			
Benzo(a)Anthracene	6.12	mg/kg-dry	0.37	82	40	140			
Chrysene	6.24	mg/kg-dry	0.37	84	40	140			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	16.2	mg/kg-dry	0.37	109	40	140			
Benzo(a)Pyrene	8.41	mg/kg-dry	0.37	113	40	140			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	16.0	mg/kg-dry	0.37	108	40	140			
Benzo(g,h,I)perylene	7.88	mg/kg-dry	0.37	106	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc **Report Date:** 06/19/14

Project: Idaho Pole **Work Order:** B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Batch: 80294
Lab ID: B14052558-001AMS	Sample Matrix Spike				Run: GCFID-HP3-B_140606C			06/07/14 12:13	
Surr: 2-Bromonaphthalene			0.37	124	40	140			
Surr: 2-Fluorobiphenyl			0.37	86	40	140			
Surr: o-Terphenyl			0.37	92	40	140			
Lab ID: B14052558-001AMSD	Sample Duplicate				Run: GCFID-HP3-B_140606C			06/07/14 13:44	
C11 to C22 Aromatics	1090	mg/kg-dry	22				17	20	
Total Extractable Hydrocarbons	3570	mg/kg-dry	22				14	20	
- Because the sample amount was significantly higher than the spike amount for some analytes, the MS and MSD spike samples are calculated as Duplicate samples based on the spike amount added plus the original sample concentration for those analytes.									
Lab ID: B14052558-001AMSD	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_140606C			06/07/14 13:44	
Naphthalene	5.51	mg/kg-dry	0.37	56	40	140	4.8	20	
2-MethylNaphthalene	11.5	mg/kg-dry	0.37	68	40	140	6.5	20	
Acenaphthylene	6.63	mg/kg-dry	0.37	62	40	140	3.3	20	
Acenaphthene	7.94	mg/kg-dry	0.37	100	40	140	22	20	R
Fluorene	8.63	mg/kg-dry	0.37	95	40	140	2.9	20	
Phenanthrene	7.44	mg/kg-dry	0.37	96	40	140	0.1	20	
Anthracene	8.39	mg/kg-dry	0.37	110	40	140	3.7	20	
Fluoranthene	8.61	mg/kg-dry	0.37	116	40	140	6.9	20	
Pyrene	9.15	mg/kg-dry	0.37	111	40	140	3.7	20	
Benzo(a)Anthracene	6.08	mg/kg-dry	0.37	82	40	140	0.6	20	
Chrysene	6.19	mg/kg-dry	0.37	83	40	140	0.8	20	
Benzo(b)Fluoranthene/Benzo(k)Fluoran	16.2	mg/kg-dry	0.37	109	40	140	0.2	20	
Benzo(a)Pyrene	8.45	mg/kg-dry	0.37	114	40	140	0.5	20	
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	16.1	mg/kg-dry	0.37	108	40	140	0.3	20	
Benzo(g,h,I)perylene	7.91	mg/kg-dry	0.37	106	40	140	0.4	20	
Surr: 2-Bromonaphthalene			0.37	127	40	140			
Surr: 2-Fluorobiphenyl			0.37	80	40	140			
Surr: o-Terphenyl			0.37	91	40	140			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hydrometrics Inc
Project: Idaho Pole

Report Date: 06/19/14
Work Order: B14052576

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-EPH									Analytical Run: R225179
Lab ID: CCV_0606HP334r-S	Continuing Calibration Verification Standard								06/07/14 15:59
n-Nonane	6.95	mg/kg	0.17	104	75	125			
n-Decane	7.05	mg/kg	0.17	106	75	125			
n-Dodecane	7.01	mg/kg	0.17	105	75	125			
n-Tetradecane	6.95	mg/kg	0.17	104	75	125			
n-Hexadecane	7.00	mg/kg	0.17	105	75	125			
n-Octadecane	6.99	mg/kg	0.17	105	75	125			
n-Nonadecane	7.03	mg/kg	0.17	105	75	125			
n-Eicosane	6.64	mg/kg	0.17	100	75	125			
n-Docosane	6.90	mg/kg	0.17	104	75	125			
n-Tetracosane	6.93	mg/kg	0.17	104	75	125			
n-Hexacosane	6.94	mg/kg	0.17	104	75	125			
n-Octacosane	6.42	mg/kg	0.17	96	75	125			
n-Triacontane	6.83	mg/kg	0.17	102	75	125			
n-Hexatriacontane	6.80	mg/kg	0.17	102	75	125			
Surr: 1-Chloro-octadecane			0.17	100	75	125			
Lab ID: CCV_0606HP335r-S	Continuing Calibration Verification Standard								06/07/14 16:45
Naphthalene	7.45	mg/kg	0.17	112	75	125			
2-MethylNaphthalene	7.58	mg/kg	0.17	114	75	125			
Acenaphthylene	7.29	mg/kg	0.17	109	75	125			
Acenaphthene	7.43	mg/kg	0.17	111	75	125			
Fluorene	7.51	mg/kg	0.17	113	75	125			
Phenanthrene	7.64	mg/kg	0.17	115	75	125			
Anthracene	7.49	mg/kg	0.17	112	75	125			
Fluoranthene	7.51	mg/kg	0.17	113	75	125			
Pyrene	7.49	mg/kg	0.17	112	75	125			
Benzo(a)Anthracene	7.53	mg/kg	0.17	113	75	125			
Chrysene	7.29	mg/kg	0.17	109	75	125			
Benzo(b)Fluoranthene/Benzo(k)Fluoran	15.1	mg/kg	0.17	113	75	125			
Benzo(a)Pyrene	7.38	mg/kg	0.17	111	75	125			
Dibenz(a,h)anthracene/Indeno(1,2,3-cd	15.0	mg/kg	0.17	112	75	125			
Benzo(g,h,I)perylene	7.34	mg/kg	0.17	110	75	125			
Surr: 2-Bromonaphthalene			0.17	107	75	125			
Surr: 2-Fluorobiphenyl			0.17	108	75	125			
Surr: o-Terphenyl			0.17	107	75	125			

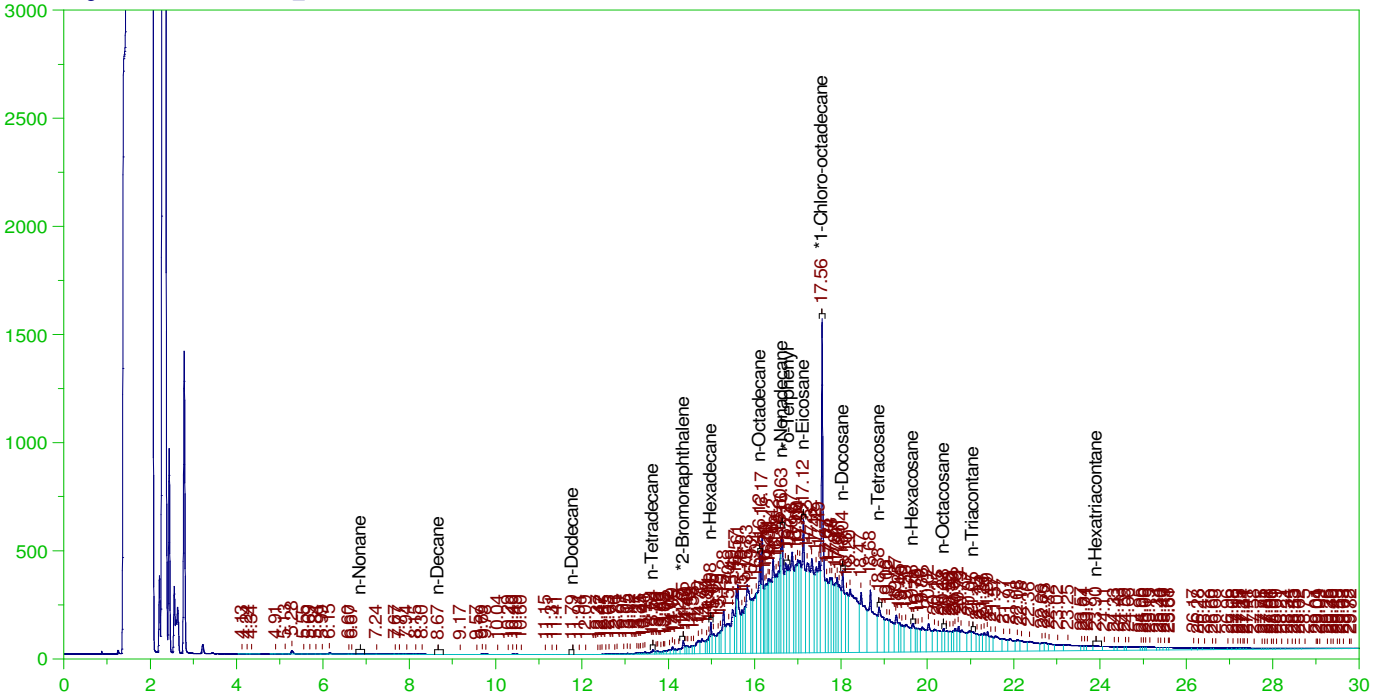
Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

IPC-SB-IW1-5 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0047.RAW B14052576-001A ;0606HP3 , $HC-ALI-GRP-S, V47



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B14052576-001A ;0606HP3 , $HC-ALI-GRP-S, V47
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0047.RAW
Date & Time Acquired: 6/8/2014 1:48:49 AM
Method File: g:\org\HP3\Methods\L3000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AL130823KM.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 30415.23
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 31274
Mean RF for Total Extractable Hydrocarbons: 30905.96
Rt range for Diesel Range Organics: 8.587 to 20.439
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.764 to 16.594
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.619 to 24.032

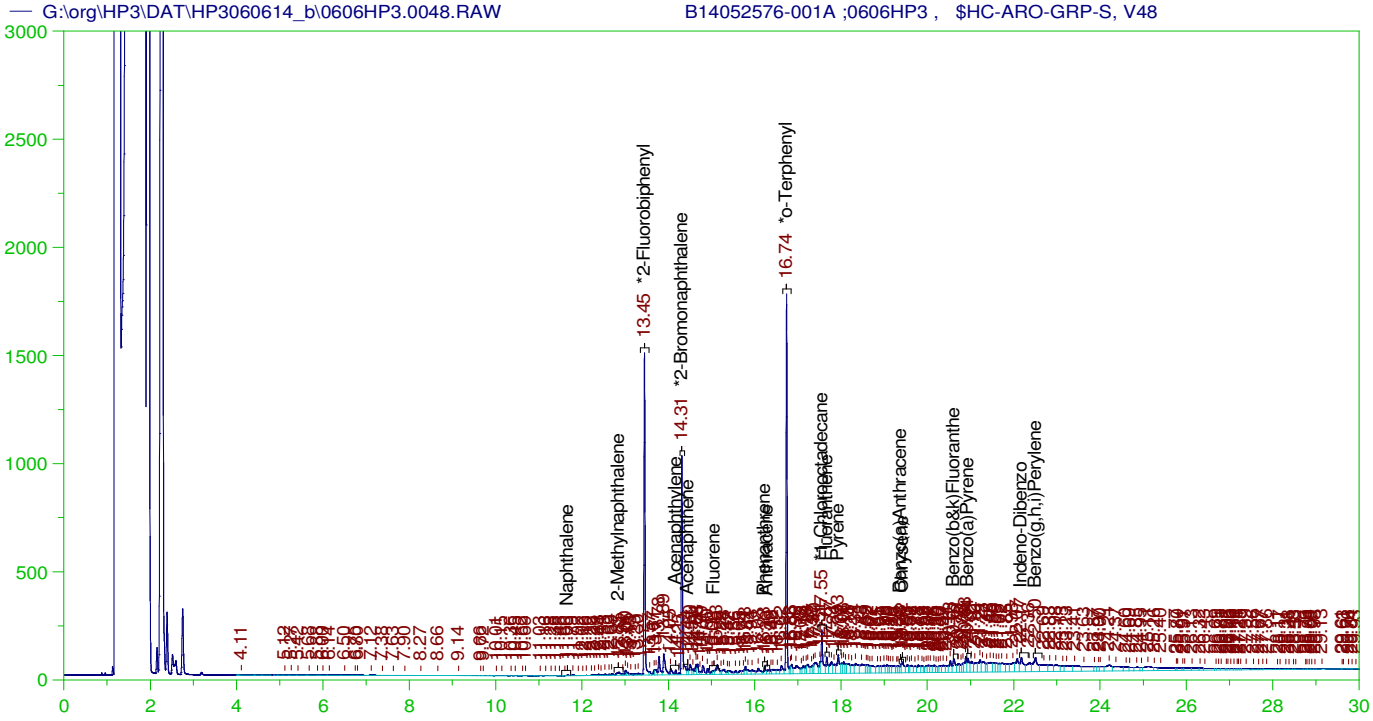
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	17.559	6.667	11.9	178.5	-

DRO Area:7.857201E+07 DRO Amount: 169.4862
TEH Area:9.359554E+07 TEH Amount: 201.8932

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:2.556805E+07 C9-C18 Amount: 56.0422
C19-C36 Area:6.41341E+07 C19-C36 Amount: 136.7144

IPC-SB-IW1-5 Feet Batch ID: 80294

G:\org\HP3\DAT\HP3060614_b\0606HP3.0048.RAW B14052576-001A ;0606HP3 , $HC-ARO-GRP-S, V48



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-001A ;0606HP3 , $HC-ARO-GRP-S, V48
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0048.RAW
Date & Time Acquired: 6/8/2014 2:34:26 AM
Method File: g:\org\HP3\Methods\R3000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

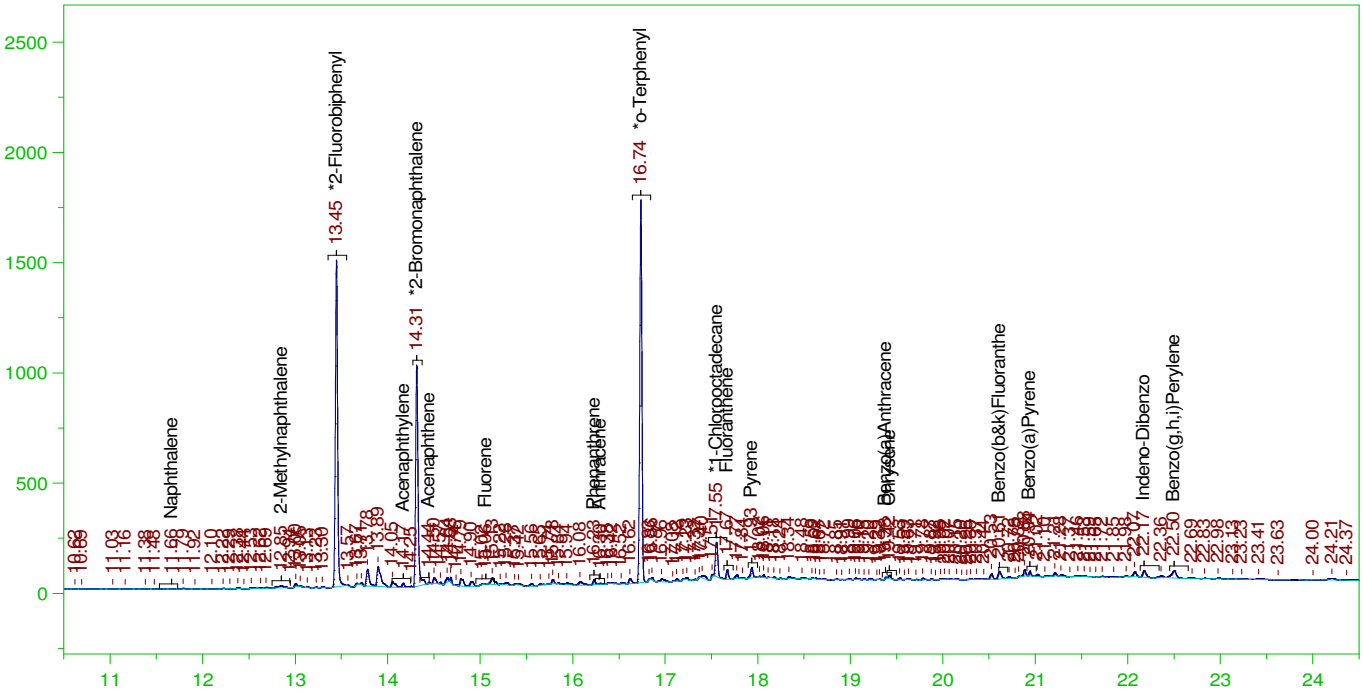
Mean RF EPH Aromatics: 32892.63
Rt range for EPH C11 to C22 Aromatics: 11.533 to 22.655

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.446	6.667	5.871	88.06	-
*2-Bromonaphthalene	14.314	6.667	6.296	94.44	-
*o-Terphenyl	16.735	6.667	5.865	87.98	-
*1-Chlorooctadecane	17.553	6.667	1.368	20.51	-

C11-C22 Aromatics Area:1.684149E+07 C11-C22 Aromatics Amount: 34.13427
EPH Aromatics total Area:2.208425E+07 EPH Aromatics Total Amount: 44.76028

IPC-SB-IW1-5 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0048.RAW B14052576-001A ;0606HP3 , $HC-ARO-GRP-S, V48



EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

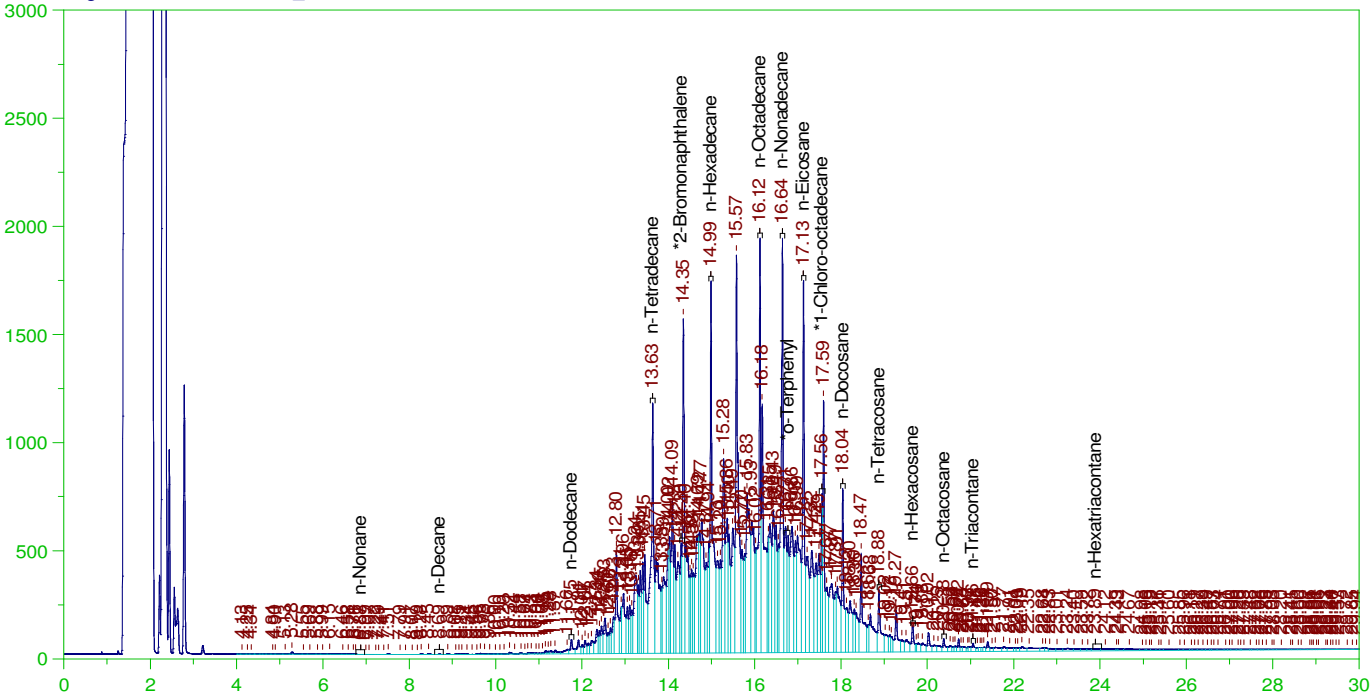
Sample Name: B14052576-001A ;0606HP3 , $HC-ARO-GRP-S, V48
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0048.RAW
Date & Time Acquired: 6/8/2014 2:34:26 AM
Method File: g:\org\HP3\Methods\RS000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.664	11.664	11.664	3994	.067	U
2-Methylnaphthalene	12.848	1.473	1.465	48531	.102	
Acenaphthylene	14.168	.177	.146	33581	.069	
Acenaphthene	14.445	14.445	14.445	8659	.067	U
Fluorene	15.06	15.06	15.06	3352	.067	U
Phenanthrene	16.229	-1.912	-1.916	43611	.091	
Anthracene	16.296	16.296	16.296	10333	.067	U
Fluoranthene	17.669	-3.36	-3.355	72960	.146	
Pyrene	17.932	-3.625	-3.619	91179	.18	
Benzo(a)Anthracene	19.381	19.381	19.381	8866	.067	U
Chrysene	19.423	-5.124	-5.11	27753	.056	J
Benzo(b&k)Fluoranthe	20.61	-6.332	-6.297	81729	.164	
Benzo(a)Pyrene	20.939	-6.637	-6.625	35824	.077	
Indeno-Dibenzo	22.174	-7.914	-7.861	81195	.164	
Benzo(g,h,i)Perylene	22.498	-8.232	-8.184	116641	.229	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.446	6.667	5.681	85.21	40-140
*2-Bromonaphthalene	14.314	6.667	5.974	89.6	40-140
*o-Terphenyl	16.735	6.667	5.589	83.83	40-140
*1-Chlorooctadecane	17.553	6.667	.655	9.83	40-140

IPC-SB-IW1-7 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0039.RAW B14052576-002A ;0606HP3 , $HC-ALI-GRP-S, V39



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B14052576-002A ;0606HP3 , $HC-ALI-GRP-S, V39
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0039.RAW
Date & Time Acquired: 6/7/2014 7:45:54 PM
Method File: g:\org\HP3\Methods\L3000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AL130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 30415.23
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 31274
Mean RF for Total Extractable Hydrocarbons: 30905.96
Rt range for Diesel Range Organics: 8.587 to 20.439
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.764 to 16.594
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.619 to 24.032

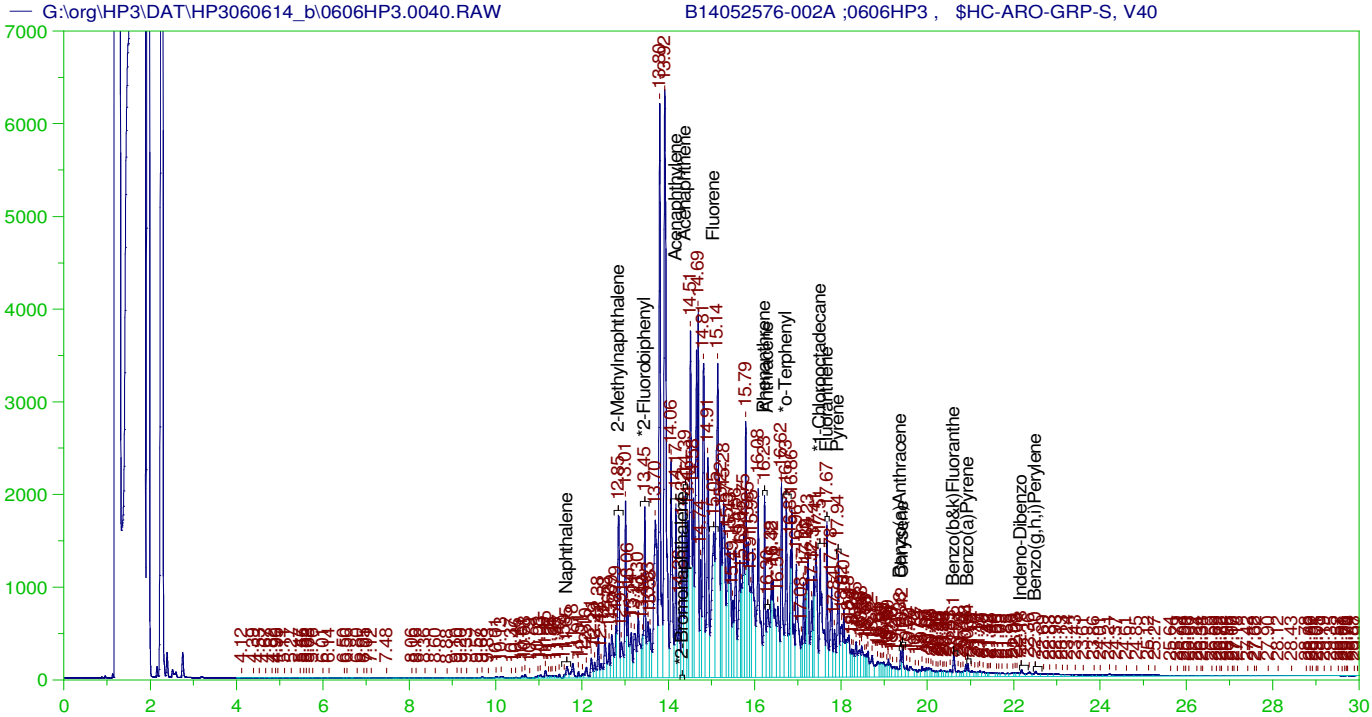
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	17.557	6.667	11.367	170.51	-

DRO Area:1.655968E+08 DRO Amount: 1071.618
TEH Area:1.729095E+08 TEH Amount: 1118.94

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:1.138474E+08 C9-C18 Amount: 748.6209
C19-C36 Area:5.771806E+07C19-C36 Amount: 369.1122

IPC-SB-IW1-7 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0040.RAW B14052576-002A ;0606HP3 , $HC-ARO-GRP-S, V40



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-002A ;0606HP3 , $HC-ARO-GRP-S, V40
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0040.RAW
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Method File: g:\org\HP3\Methods\R3060640KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

Mean RF EPH Aromatics: 32892.63
Rt range for EPH C11 to C22 Aromatics: 11.533 to 22.655

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.454	6.667	29.922	448.83	-
*2-Bromonaphthalene	14.324	6.667	36.818	552.27	-
*o-Terphenyl	16.726	6.667	35.603	534.05	-
*1-Chlorooctadecane	17.513	6.667	48.5	727.5	-

C11-C22 Aromatics Area:3.429213E+08 C11-C22 Aromatics Amount: 2085.095
EPH Aromatics total Area:3.480906E+08 EPH Aromatics Total Amount: 2116.526

IPC-SB-IW1-7 Feet Batch ID: 80294

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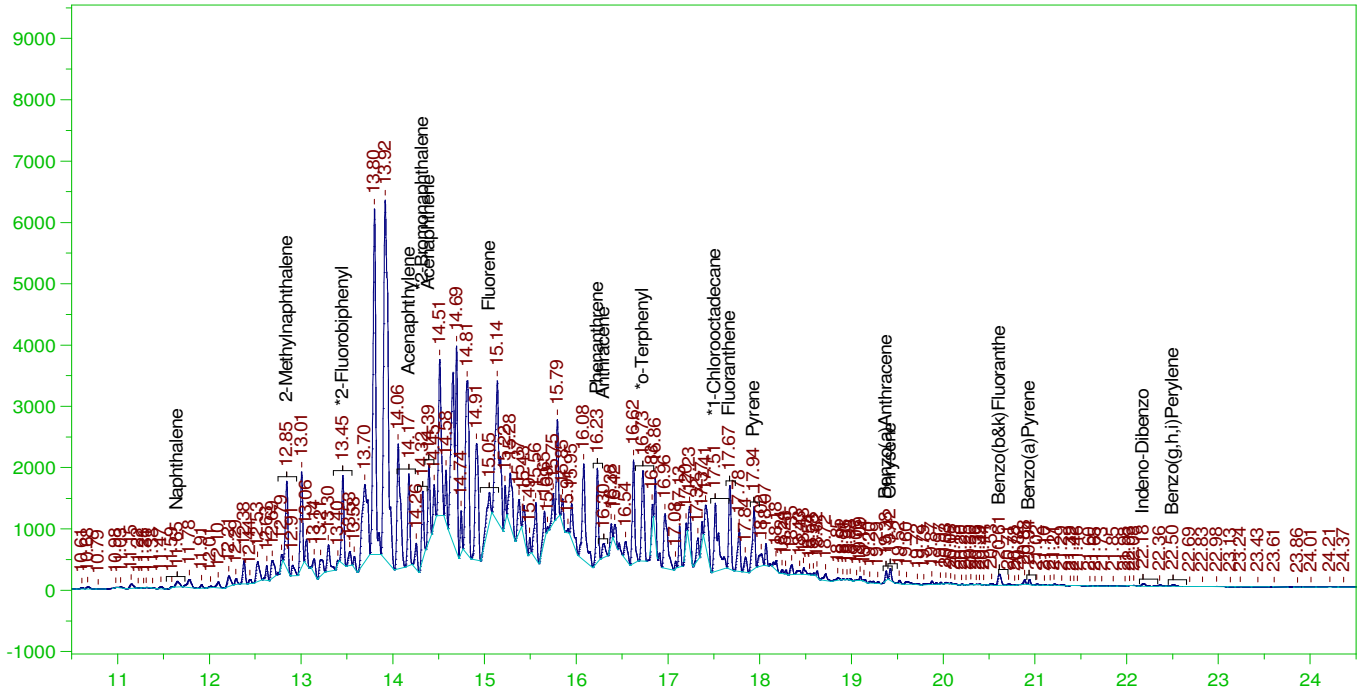


EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

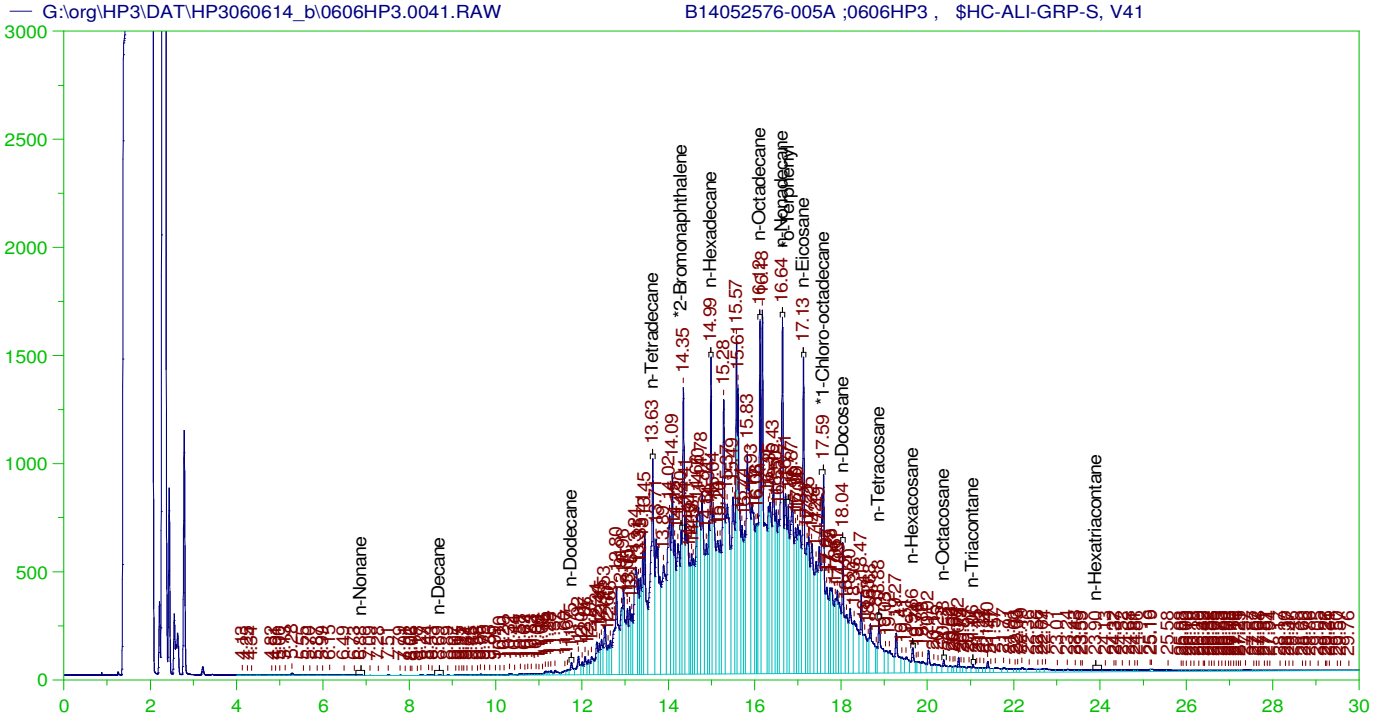
Sample Name: B14052576-002A ;0606HP3 , $HC-ARO-GRP-S, V40
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0040.RAW
Date & Time Acquired: 6/7/2014 8:30:59 PM
Method File: g:\org\HP3\Methods\RS000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.649	2.69	2.675	259022	1.581	
2-Methylnaphthalene	12.845	1.473	1.479	2758232	17.334	
Acenaphthylene	14.174	.177	.15	2527414	15.544	
Acenaphthene	14.393	-.076	-.069	2128260	12.513	
Fluorene	15.051	-.731	-.727	1794479	11.007	
Phenanthrene	16.23	-1.912	-1.906	2560169	15.98	
Anthracene	16.298	-1.97	-1.974	590321	3.552	
Fluoranthene	17.673	-3.36	-3.349	2255901	13.568	
Pyrene	17.936	-3.625	-3.612	2130866	12.624	
Benzo(a)Anthracene	19.376	-5.072	-5.053	217505	1.325	
Chrysene	19.422	-5.124	-5.099	305876	1.86	
Benzo(b&k)Fluoranthe	20.61	-6.332	-6.286	471052	2.834	
Benzo(a)Pyrene	20.936	-6.637	-6.613	130735	.841	
Indeno-Dibenzo	22.177	-7.914	-7.853	115817	.704	
Benzo(g,h,i)Perylene	22.503	-8.232	-8.179	84328	.496	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.454	6.667	17.221	258.31	40-140
*2-Bromonaphthalene	14.324	6.667	18.457	276.86	40-140
*o-Terphenyl	16.726	6.667	18.35	275.25	40-140
*1-Chlorooctadecane	17.513	6.667	26.632	399.47	40-140

IPC-SB-IW2A-7.5 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0041.RAW B14052576-005A ;0606HP3 , $HC-ALI-GRP-S, V41



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B14052576-005A ;0606HP3 , $HC-ALI-GRP-S, V41
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0041.RAW
Date & Time Acquired: 6/7/2014 9:16:21 PM
Method File: g:\org\HP3\Methods\L3000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AL130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 30415.23
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 31274
Mean RF for Total Extractable Hydrocarbons: 30905.96
Rt range for Diesel Range Organics: 8.587 to 20.439
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.764 to 16.594
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.619 to 24.032

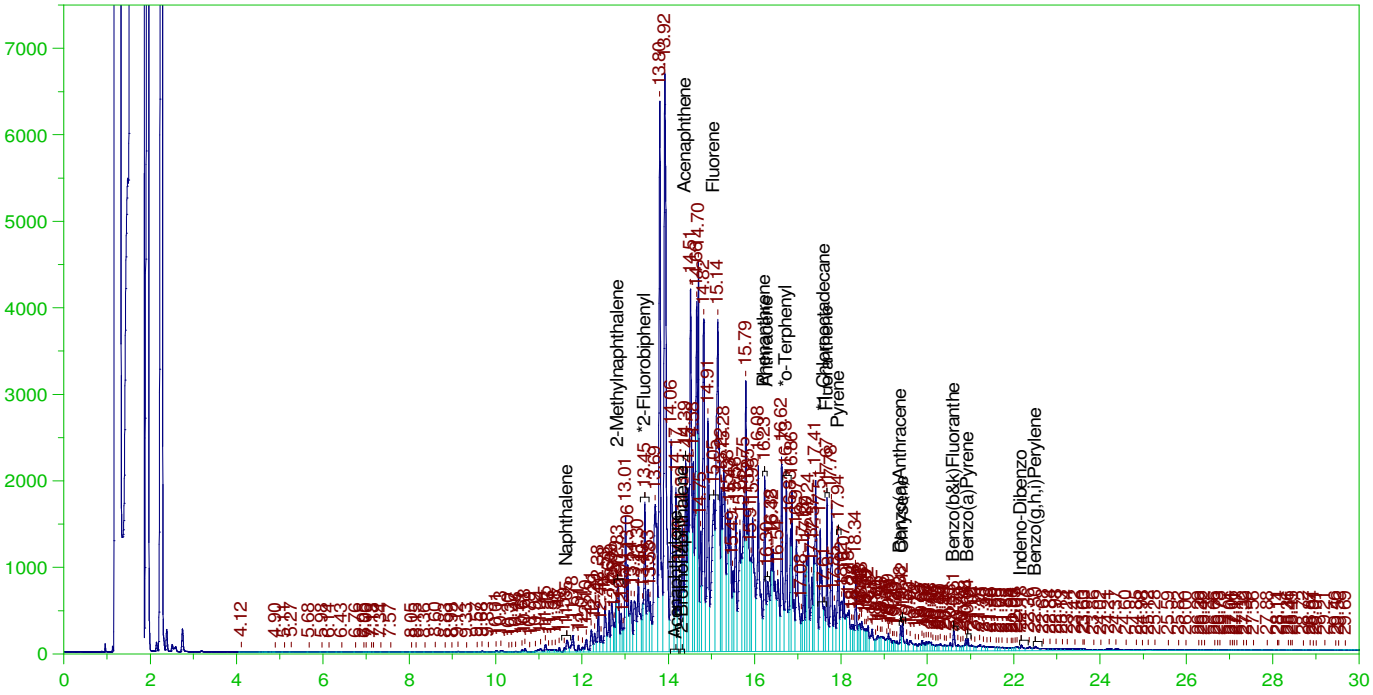
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	17.593	6.667	30.825	462.37	-

DRO Area:2.103049E+08 DRO Amount: 1360.934
TEH Area:2.192411E+08 TEH Amount: 1418.762

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:1.499509E+08 C9-C18 Amount: 986.0254
C19-C36 Area:6.792786E+07C19-C36 Amount: 434.4047

IPC-SB-IW2A-7.5 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0042.RAW B14052576-005A ;0606HP3 , $HC-ARO-GRP-S, V42



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-005A ;0606HP3 , $HC-ARO-GRP-S, V42
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0042.RAW
Date & Time Acquired: 6/7/2014 10:01:46 PM
Method File: g:\org\HP3\Methods\R3060642KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

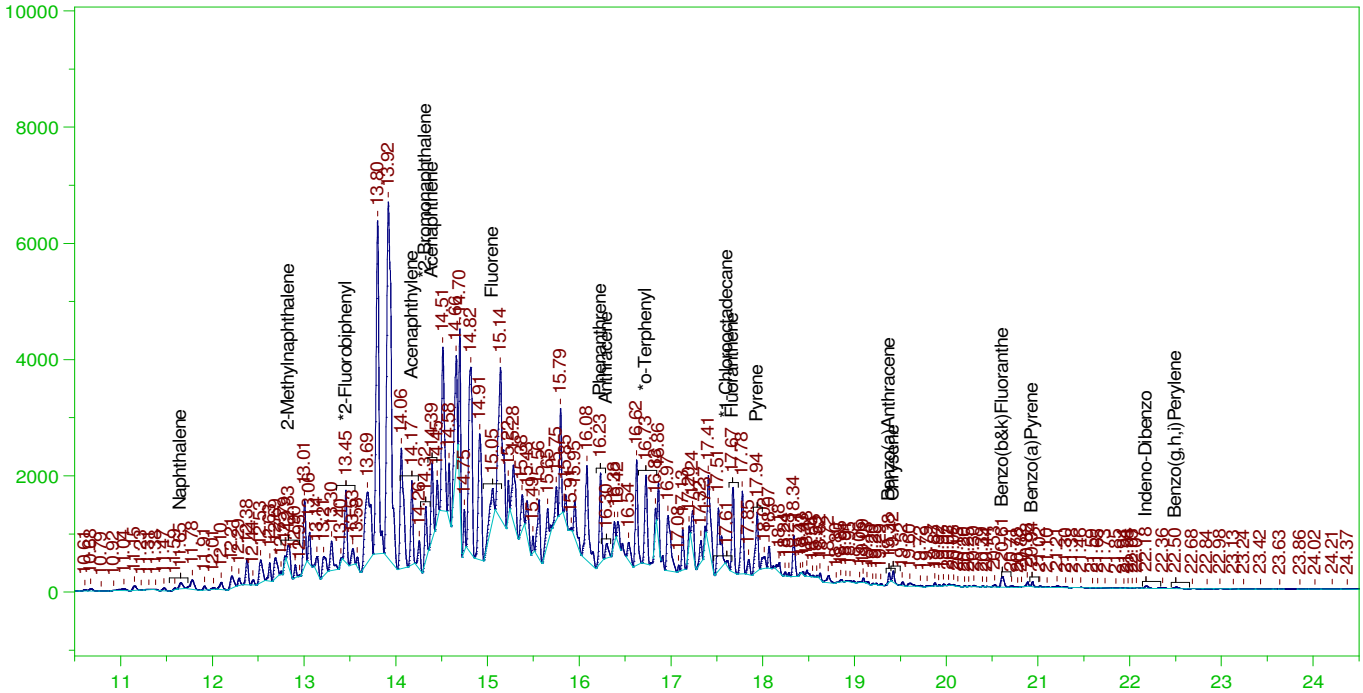
Mean RF EPH Aromatics: 32892.63
Rt range for EPH C11 to C22 Aromatics: 11.533 to 22.655

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.455	6.667	30.247	453.71	-
*2-Bromonaphthalene	14.325	6.667	35.469	532.04	-
*o-Terphenyl	16.727	6.667	35.781	536.71	-
*1-Chlorooctadecane	17.609	6.667	10.059	150.88	-

C11-C22 Aromatics Area:3.844109E+08 C11-C22 Aromatics Amount: 2337.368
EPH Aromatics total Area:3.895568E+08 EPH Aromatics Total Amount: 2368.657

IPC-SB-IW2A-7.5 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0042.RAW B14052576-005A ;0606HP3 , $HC-ARO-GRP-S, V42



EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

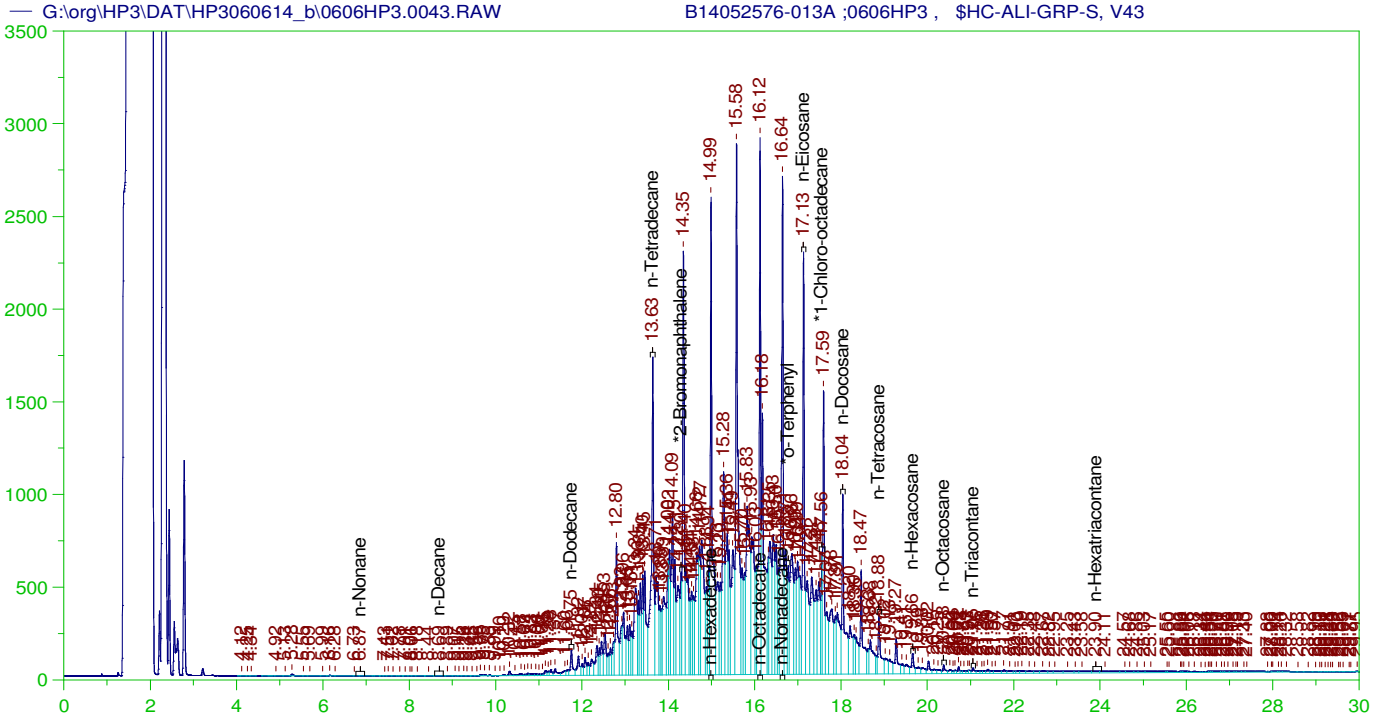
Sample Name: B14052576-005A ;0606HP3 , $HC-ARO-GRP-S, V42
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0042.RAW
Date & Time Acquired: 6/7/2014 10:01:46 PM
Method File: g:\org\HP3\Methods\RS000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 6 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.653	2.69	2.672	289543	1.767	
2-Methylnaphthalene	12.832	1.473	1.493	872238	5.481	
Acenaphthylene	14.174	.177	.151	2511816	15.448	
Acenaphthene	14.395	-.076	-.07	2316181	13.618	
Fluorene	15.053	-.731	-.728	2054230	12.6	
Phenanthrene	16.231	-1.912	-1.907	2589764	16.165	
Anthracene	16.297	-1.97	-1.972	607204	3.654	
Fluoranthene	17.674	-3.36	-3.349	2357964	14.181	
Pyrene	17.938	-3.625	-3.613	2170991	12.861	
Benzo(a)Anthracene	19.376	-5.072	-5.051	228044	1.389	
Chrysene	19.422	-5.124	-5.097	300367	1.827	
Benzo(b&k)Fluoranthe	20.61	-6.332	-6.285	478627	2.879	
Benzo(a)Pyrene	20.937	-6.637	-6.612	127955	.823	
Indeno-Dibenzo	22.175	-7.914	-7.851	106179	.645	
Benzo(g,h,i)Perylene	22.502	-8.232	-8.177	73465	.432	

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.455	6.667	15.075	226.12	40-140
*2-Bromonaphthalene	14.325	6.667	15.739	236.09	40-140
*o-Terphenyl	16.727	6.667	18.262	273.93	40-140
*1-Chlorooctadecane	17.609	6.667	1.201	18.02	40-140

IPC-SB-B6-11 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0043.RAW B14052576-013A ;0606HP3 , $HC-ALI-GRP-S, V43



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B14052576-013A ;0606HP3 , $HC-ALI-GRP-S, V43
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0043.RAW
Date & Time Acquired: 6/7/2014 10:47:06 PM
Method File: g:\org\HP3\Methods\L3060643KM-L%.met
Calibration File: G:\Org\HP3\Cals\AL130823KM.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 30415.23
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 31274
Mean RF for Total Extractable Hydrocarbons: 30905.96
Rt range for Diesel Range Organics: 8.587 to 20.439
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.764 to 16.594
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.619 to 24.032

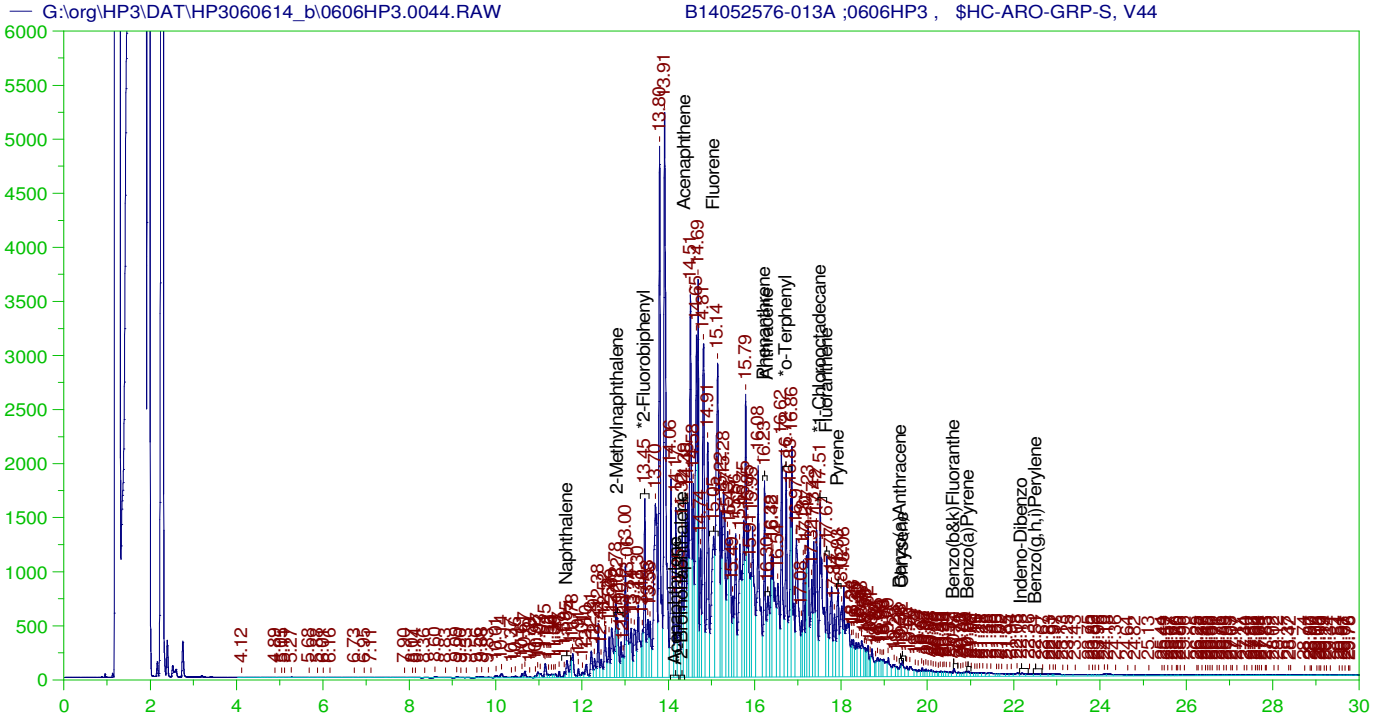
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane_____	17.558	6.667	13.318	199.76	-

DRO Area:2.009297E+08 DRO Amount: 1733.687
TEH Area:2.078216E+08 TEH Amount: 1793.153

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:1.419412E+08 C9-C18 Amount: 1244.474
C19-C36 Area:6.452254E+07C19-C36 Amount: 550.1699

IPC-SB-B6-11 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0044.RAW B14052576-013A ;0606HP3 , $HC-ARO-GRP-S, V44



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-013A ;0606HP3 , $HC-ARO-GRP-S, V44
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0044.RAW
Date & Time Acquired: 6/7/2014 11:32:16 PM
Method File: g:\org\HP3\Methods\R3060644KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

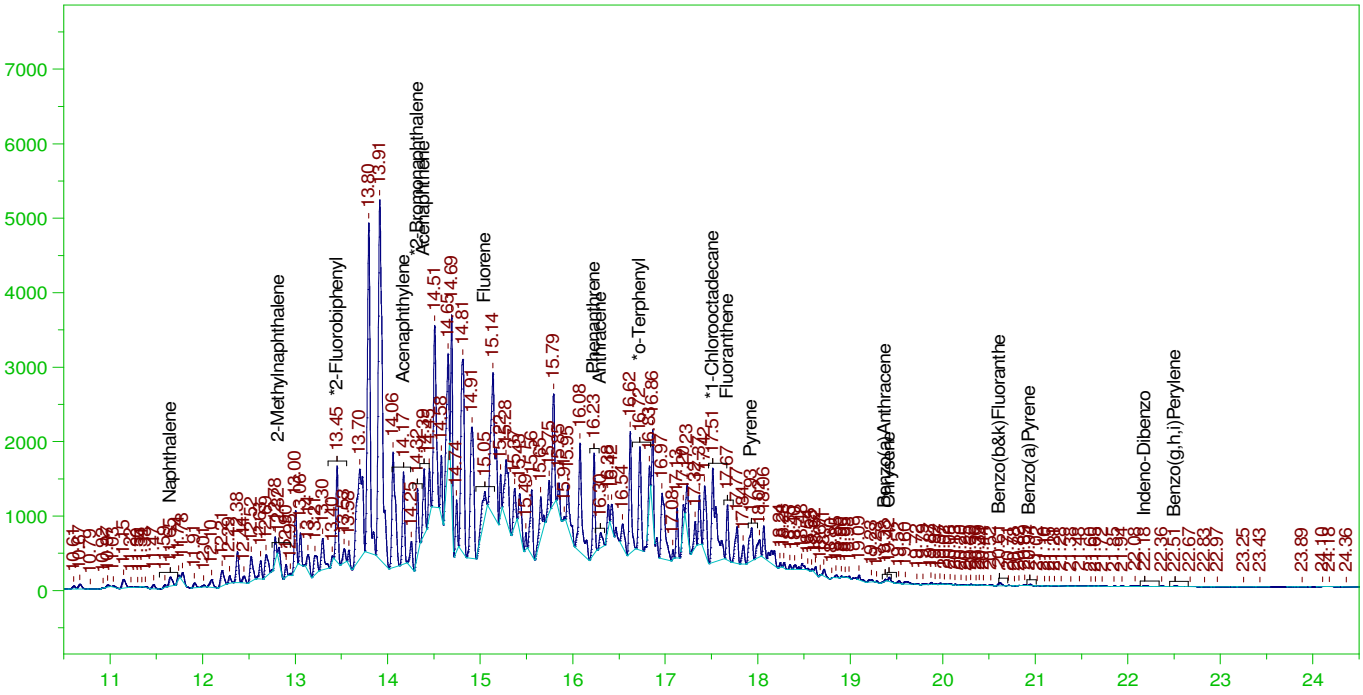
Mean RF EPH Aromatics: 32892.63
Rt range for EPH C11 to C22 Aromatics: 11.533 to 22.655

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.453	6.667	34.299	514.48	-
*2-Bromonaphthalene	14.322	6.667	39.944	599.16	-
*o-Terphenyl	16.724	6.667	41.793	626.89	-
*1-Chlorooctadecane	17.514	6.667	78.469	1177.03	-

C11-C22 Aromatics Area:3.167834E+08 C11-C22 Aromatics Amount: 2568.221
EPH Aromatics total Area:3.216743E+08 EPH Aromatics Total Amount: 2607.874

IPC-SB-B6-11 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0044.RAW B14052576-013A ;0606HP3 , $HC-ARO-GRP-S, V44



EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

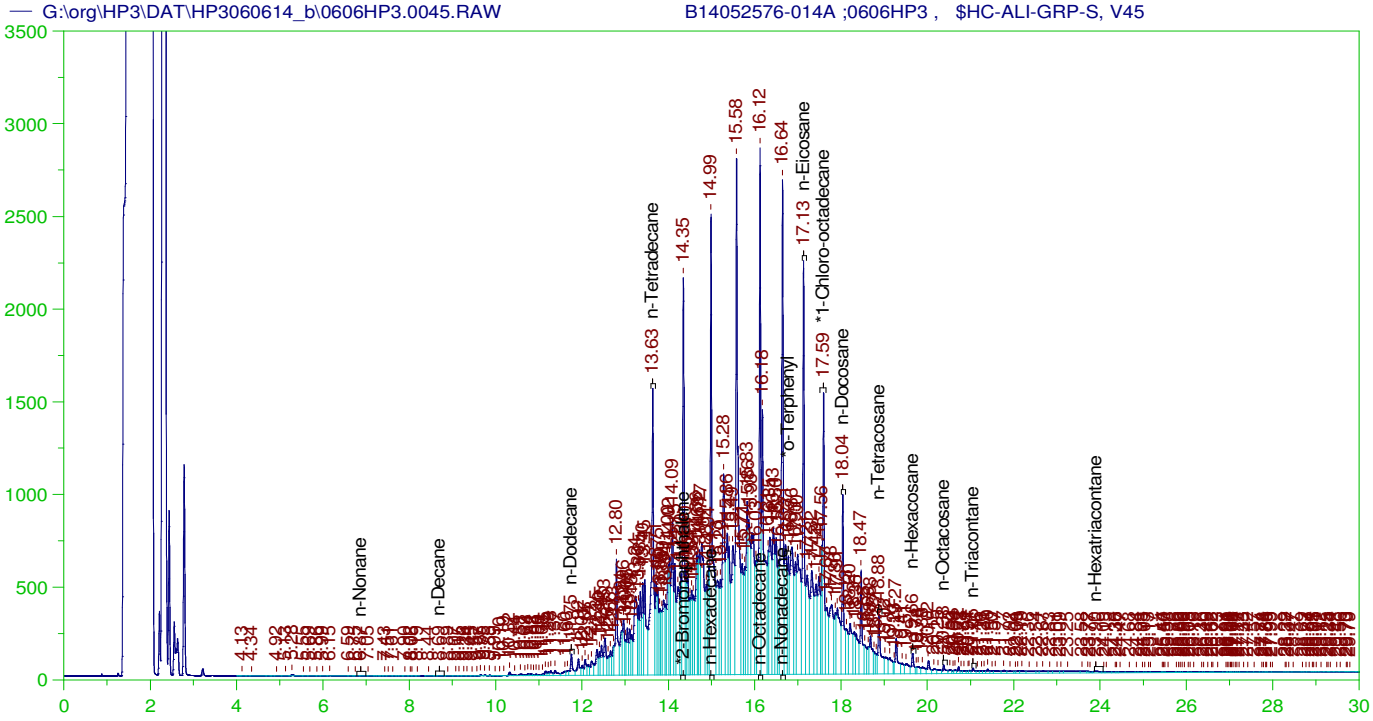
Sample Name: B14052576-013A ;0606HP3 , $HC-ARO-GRP-S, V44
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0044.RAW
Date & Time Acquired: 6/7/2014 11:32:16 PM
Method File: g:\org\HP3\Methods\RS000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.65	2.69	2.671	321662	2.617	
2-Methylnaphthalene	12.821	1.473	1.501	312959	2.622	
Acenaphthylene	14.171	.177	.15	2085071	17.098	
Acenaphthene	14.391	-.076	-.069	1455609	11.411	
Fluorene	15.05	-.731	-.728	1452430	11.878	
Phenanthrene	16.23	-1.912	-1.908	2296566	19.113	
Anthracene	16.302	-1.97	-1.98	461072	3.7	
Fluoranthene	17.671	-3.36	-3.35	1215390	9.746	
Pyrene	17.931	-3.625	-3.609	1175880	9.288	
Benzo(a)Anthracene	19.377	-5.072	-5.055	44567	.362	
Chrysene	19.419	-5.124	-5.098	99465	.807	
Benzo(b&k)Fluoranthe	20.612	-6.332	-6.291	111815	.897	
Benzo(a)Pyrene	20.941	-6.637	-6.619	26141	.224	J
Indeno-Dibenzo	22.183	22.183	22.183	21136	.533	U
Benzo(g,h,i)Perylene	22.509	22.509	22.509	16045	.267	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.453	6.667	19.838	297.57	40-140
*2-Bromonaphthalene	14.322	6.667	18.589	278.83	40-140
*o-Terphenyl	16.724	6.667	21.258	318.87	40-140
*1-Chlorooctadecane	17.514	6.667	42.042	630.63	40-140

IPC-SB-B6D-11 Feet Batch ID: 80294

— G:\org\HP3\DAT\HP3060614_b\0606HP3.0045.RAW B14052576-014A ;0606HP3 , $HC-ALI-GRP-S, V45



EPH ALIPHATICS (FID) ANALYSIS REPORT

Sample Name: B14052576-014A ;0606HP3 , $HC-ALI-GRP-S, V45
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0045.RAW
Date & Time Acquired: 6/8/2014 12:17:38 AM
Method File: g:\org\HP3\Methods\LR060645KL-L%.met
Calibration File: G:\Org\HP3\Cals\AL130823KL.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

Mean RF for C9 to C18 Aliphatic Hydrocarbons: 30415.23
Mean RF for C19 to C36 Aliphatic Hydrocarbons: 31274
Mean RF for Total Extractable Hydrocarbons: 30905.96
Rt range for Diesel Range Organics: 8.61 to 20.46
Rt range for C9 to C18 Aliphatic Hydrocarbons: 6.79 to 16.61
Rt range for C19 to C36 Aliphatic Hydrocarbons: 16.635 to 24.07

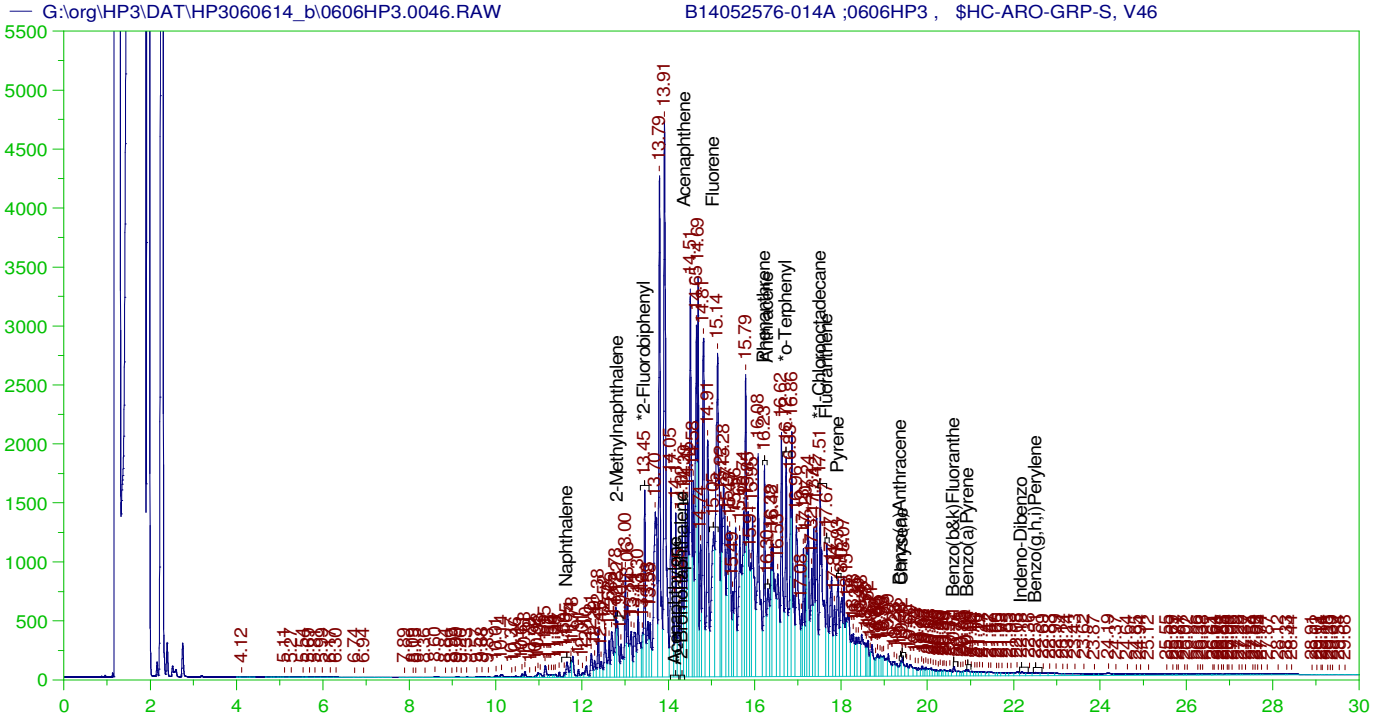
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*1-Chloro-octadecane	17.594	6.667	34.647	519.7	-

DRO Area:1.966702E+08 DRO Amount: 1696.935
TEH Area:2.071958E+08 TEH Amount: 1787.753

Aliphatic Hydrocarbon Areas and Amounts:
C9-C18 Area:1.400866E+08 C9-C18 Amount: 1228.215
C19-C36 Area:6.590579E+07C19-C36 Amount: 561.9646

IPC-SB-B6D-11 Feet Batch ID: 80294

G:\org\HP3\DAT\HP3060614_b\0606HP3.0046.RAW B14052576-014A ;0606HP3 , $HC-ARO-GRP-S, V46



EPH AROMATICS RANGE VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-014A ;0606HP3 , $HC-ARO-GRP-S, V46
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0046.RAW
Date & Time Acquired: 6/8/2014 1:03:09 AM
Method File: g:\org\HP3\Methods\R3060646KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

Mean RF EPH Aromatics: 32892.63
Rt range for EPH C11 to C22 Aromatics: 11.533 to 22.655

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
*2-Fluorobiphenyl	13.452	6.667	32.113	481.7	-
*2-Bromonaphthalene	14.321	6.667	39.332	589.97	-
*o-Terphenyl	16.724	6.667	41.55	623.26	-
*1-Chlorooctadecane	17.513	6.667	79.065	1185.97	-

C11-C22 Aromatics Area:3.030166E+08 C11-C22 Aromatics Amount: 2456.612
EPH Aromatics total Area:3.078826E+08 EPH Aromatics Total Amount: 2496.061

IPC-SB-B6D-11 Feet Batch ID: 80294

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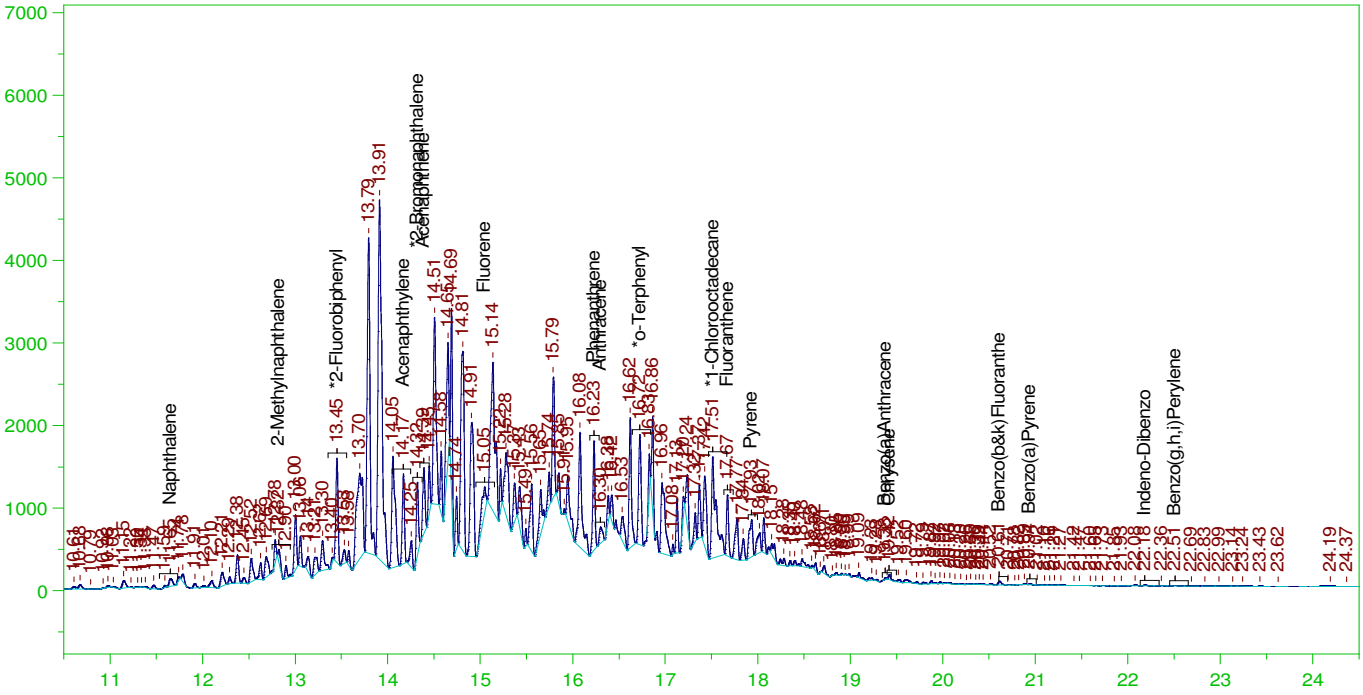

EPH AROMATICS TARGET VALUES (FID) ANALYSIS REPORT

Sample Name: B14052576-014A ;0606HP3 , $HC-ARO-GRP-S, V46
Raw File: G:\org\HP3\DAT\HP3060614_b\0606HP3.0046.RAW
Date & Time Acquired: 6/8/2014 1:03:09 AM
Method File: g:\org\HP3\Methods\RS000KM-L%.met
Calibration File: G:\Org\HP3\Cals\AR130823KM.CAL
Sample Weight: 30 Dilution: 8 S.A.: 1

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
Naphthalene	11.651	2.69	2.669	261624	2.129	
2-Methylnaphthalene	12.821	1.473	1.5	278396	2.333	
Acenaphthylene	14.17	.177	.15	1839342	15.083	
Acenaphthene	14.389	-.076	-.069	1319124	10.341	
Fluorene	15.048	-.731	-.728	1303514	10.66	
Phenanthrene	16.229	-1.912	-1.908	2250944	18.734	
Anthracene	16.302	-1.97	-1.981	467810	3.754	
Fluoranthene	17.672	-3.36	-3.351	1225430	9.827	
Pyrene	17.931	-3.625	-3.611	1187977	9.384	
Benzo(a)Anthracene	19.377	-5.072	-5.057	32000	.26	J
Chrysene	19.419	-5.124	-5.098	103262	.837	
Benzo(b&k)Fluoranthe	20.61	-6.332	-6.289	121871	.978	
Benzo(a)Pyrene	20.939	-6.637	-6.618	28365	.243	J
Indeno-Dibenzo	22.181	22.181	22.181	25285	.533	U
Benzo(g,h,i)Perylene	22.508	22.508	22.508	20991	.267	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
*2-Fluorobiphenyl	13.452	6.667	19.48	292.2	40-140
*2-Bromonaphthalene	14.321	6.667	18.496	277.45	40-140
*o-Terphenyl	16.724	6.667	20.852	312.77	40-140
*1-Chlorooctadecane	17.513	6.667	41.165	617.47	40-140

Workorder Receipt Checklist

Hydrometrics Inc

B14052576

Login completed by: Randa Nees

Date Received: 5/30/2014

Reviewed by: BL2000\tedwards

Received by: jrz

Reviewed Date: 6/2/2014

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	1.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: HYDROMETRICS

Project Name, PWS, Permit, Etc.: IDAHO POLE

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☒

Report Mail Address (Required): 5602 Hesper Road, Billings, MT 59106

Contact Name: HEIDI KAISER

Phone/Fax: 406-697-0410 (Cell)

Sampler: (Please Print) H. KAISER

☑ No Hard Copy Email: hkaiser@hydrometrics.com

Invoice Contact & Phone: SAME AS ABOVE

Purchase Order: 50

Quote/Bottle Order: 80391

Invoice Address (Required): ABOVE

☐ No Hard Copy Email:

Special Report/Formats:
☐ DW ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format:
☐ State: ☐ LEVEL IV
☐ Other: ☐ NELAC

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: FRACTIONATE IF GREATER THAN 200mg/kg SCREEN FOR EPH

Shipped by: HAND

Cooler ID(s): TB

Receipt Temp: 1.0 °C

On Ice: Y N

Custody Seal: On Bottle Y N; On Cooler Y N

Intact Y N

Signature Match Y N

ANALYSIS REQUESTED

Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (1 CONTAINER)	EPH Screen	SEE ATTACHED	Standard Turnaround (TAT)	RUSH	LABORATORY USE ONLY
1	IPC-SB-IW1-5'	5-28-14	1005	SOIL	X				B1405257L-001
2	IPC-SB-IW1-7'		0945		X				002
3	IPC-SB-IW1-23'		1030		X				003
4	IPC-SB-IW2A-6'	5-29-14	0735		X				004
5	IPC-SB-IW2A-7.5'	"	0730		X				005
6	IPC-SB-IW2-19-21'	5-28-14	1500		X				006
7	IPC-SB-IW3-6-7'	5-29-14	0805		X				007
8	IPC-SB-IW3-8-9'		0945		X				008
9	IPC-SB-IW3-16'		0930		X				009
10	IPC-SB-B1-9-10'		1245		X				010

HOLD FOR CLIENT

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
HEIDI KAISER	5/30/14 1348				
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: BRZOZOWSKI	5/30/14 1348	

Sample Disposal: Return to Client: Lab Disposal:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

Chain of Custody and Analytical Request Record

PLEASE PRINT (Provide as much information as possible.)

Company Name: HYDROMETRICS

Project Name, PWS, Permit, Etc.: ~~IDAHO~~ IDAHO POLE

Sample Origin State: MT

EPA/State Compliance: Yes ☐ No ☒

Report Mail Address (Required):

Contact Name: H. KAISER Phone/Fax: 406 656 1172 Cell: 406 697-0410

Sampler: (Please Print) H. KAISER

☑ No Hard Copy Email: hkaiser@hydrometrics.com

Invoice Contact & Phone: SAME AS ABOVE

Purchase Order:

Quote/Bottle Order: 80391

Invoice Address (Required): 5602 Hesper Rd Billings MT 59106

☐ No Hard Copy Email:

Special Report/Formats:
☐ DW ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format:
☐ State: ☐ LEVEL IV
☐ Other: ☐ NELAC

ANALYSIS REQUESTED

Standard Turnaround (TAT) — RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: see page 1

Shipped by: HAND

Cooler ID(s): TB

Receipt Temp 1.0 °C

On Ice: Y N

Custody Seal On Bottle Y N; On Cooler Y N

Intact Y N

Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O DW; Air Water Soils/Solids Vegetation Bioassay Other DW - Drinking Water)	EPH Screen	SEE ATTACHED										LABORATORY USE ONLY
1	IPC-SB-B2-65-7'	5-29-14	1310	1-SOIL	X										HOLD For Client	B405257 6-011
2	IPC-SB-B5-5-9'		1515												Hold for Client	012
3	IPC-SB-B6-11'		1615													013
4	IPC-SB-B6D-11'		1630													014
5																
6																
7																
8																
9																
10																

Custody Record MUST be Signed

Relinquished by (print): HEIDI KAISER Date/Time: 5/30/14 1348 Signature: Heidi Kaiser

Relinquished by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by (print): Date/Time: Signature:

Received by Laboratory: JR ZONER 5/30/14 1348 Signature:

Sample Disposal: Return to Client: Lab Disposal:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

APPENDIX C
SOIL OXIDANT TESTING PROCEDURES