

Memorandum

Date: 1/26/2017
To: City of Shelby
Copy to: NA
From: KLJ - Jason Crawford
RE: Summary of Findings - DEQ Underground Storage Tank Program Groundwater Analysis



Introduction

During the December 2016 storm water and sanitary sewer work session with KLJ and the City, KLJ was asked to prepare a scope and fee for providing an analysis of the existing sump pumps along Main Street and a DEQ file review for available groundwater information also in the Main Street area.

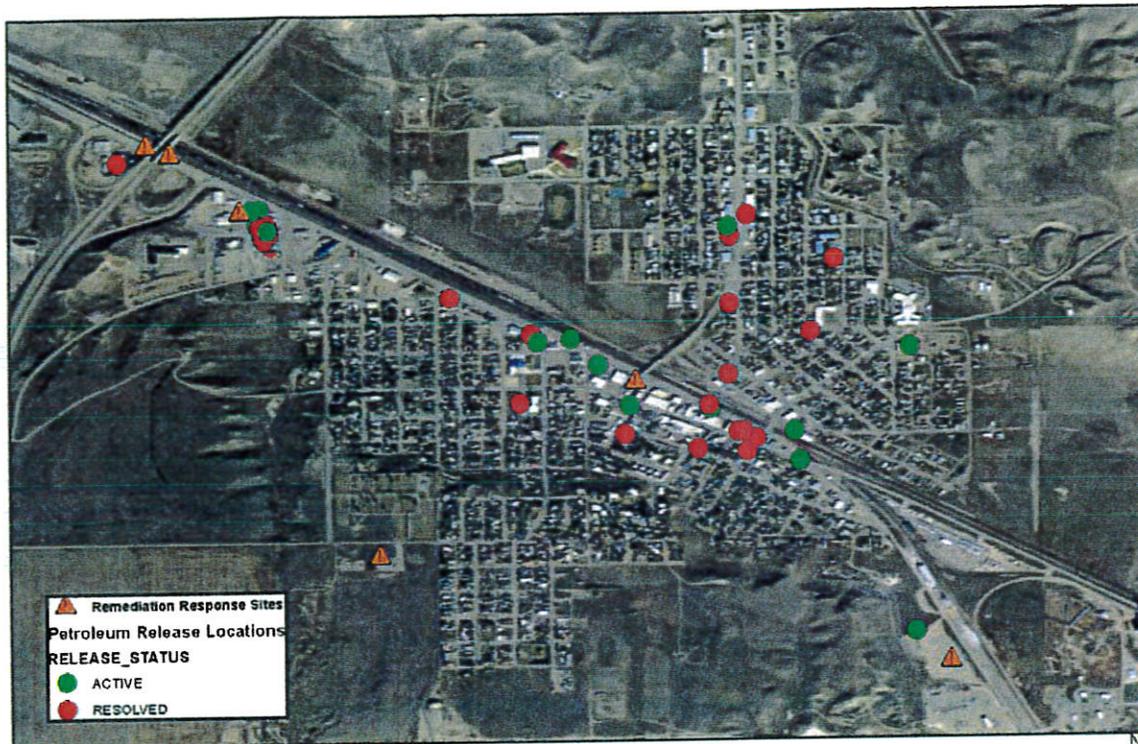
KLJ submitted the scope and fee and the City gave us the go-ahead to complete the DEQ file review. The DEQ file review included analyzing up to 8 reports available through the Underground Storage Tank (UST) Program administered by the DEQ, review those files for pertinent groundwater information, and summarize the findings in a report/memo. Following is a description of the sites and the reports reviewed, and a summary of the findings.

UST and Brownfields Sites

The City of Shelby provided the following monitoring well locations for consideration:

- Intersection of Main St. and Fourth Street
- Intersection of Front St. and 5th St.
- Bear Paw Credit Union
- Town Pump
- Two locations along Oilfield Ave.

The DEQ, Brownfields Coordinator, provided the following map of potential brownfields sites.



Active and Closed Petroleum Sites in: Shelby, MT
1/23/17

Review of the DEQ UST website resulted in a complete list of underground storage tanks in the City of Shelby. The complete list is included as Exhibit A.

Discussions with the DEQ Brownfields Coordinator and DEQ Files Management indicated that the sites may or may not have groundwater information associated with them. The list was narrowed with priority given to those sites closest to the 100-400 blocks of Main Street and 1st Street S, those areas most relevant to the storm drainage sump pump issues. Following is the narrowed list with the highest priority sites included at the top:

- 5107144 - Bryans Auto Repair - 400 Main Street
- 5100908 - Rainbow Ford and Mercury Inc - 461 Main St
- 5100513 - Fulton Producing Co - 127 Main St
- 5106113 - Main Street Exxon - 101 E Main St
- 5107718 - C JS Chevron - 100 Main Street
- 5108782 - Qwest Shelby Central - 330 1st St S
- 5613799 - Old Toole County Hospital - 112 1st St S
- 5101513 - R E Svare - 151 1st St S



- 6015007, 5108629, 5108630 - Simons Petroleum - 530 & 531 W Roosevelt Hwy & HWY 2
- 5109749 - Town Pump -1350 W Roosevelt Hwy
- 5106111 - Ben Taylor Inc Fuel Depot - 130 ½ Front Street
- 5109633 - BN Shelby Fueler - Front St

KLJ worked closely with DEQ Files Management to obtain available files from the sites included in the list above.

Following is the list of sites that DEQ could provide information for:

- 5107144 - Bryans Auto Repair - 400 Main Street
- 5100513 - Fulton Producing Co - 127 Main St
- 5107718 - C JS Chevron - 100 Main Street
- 5108782 - Qwest Shelby Central - 330 1st St S
- 5109749 - Town Pump -1350 W Roosevelt Hwy
- 5109633 - BN Shelby Fueler - Front St

Site Information

Many of the sites had very limited information while others had several hundred pages of information. The information has been reviewed for relevant groundwater data. The relevant ground water data is included below and the relevant excerpts from the reports are included in Exhibit B. All the information provided by DEQ is available upon request.

[Site 5107144 – Bryans Auto Repair – 400 Main Street](#)

Information for this site consisted of an environmental log of exploration boring located “in the front of the building near the office door” to a depth of 17’ below ground surface (bgs). The log indicated static groundwater level at 10’ bgs. Review of the lithology did not reveal the water bearing layer but did mention “silty clay some rock at 16’”. The water was analyzed for petroleum hydrocarbons.

[Site 5100513 – Fulton Producing Co – 127 Main St](#)

Information for this site was limited to a single letter from DEQ stating the No Further Corrective Action is Required. The letter did indicate that a test pit was completed at the site to a depth of approximately 12’ bgs. The pit did not reach ground water. The letter is dated January 25, 1993.

[Site 5107718 – C Js Chevron – 100 Main Street](#)

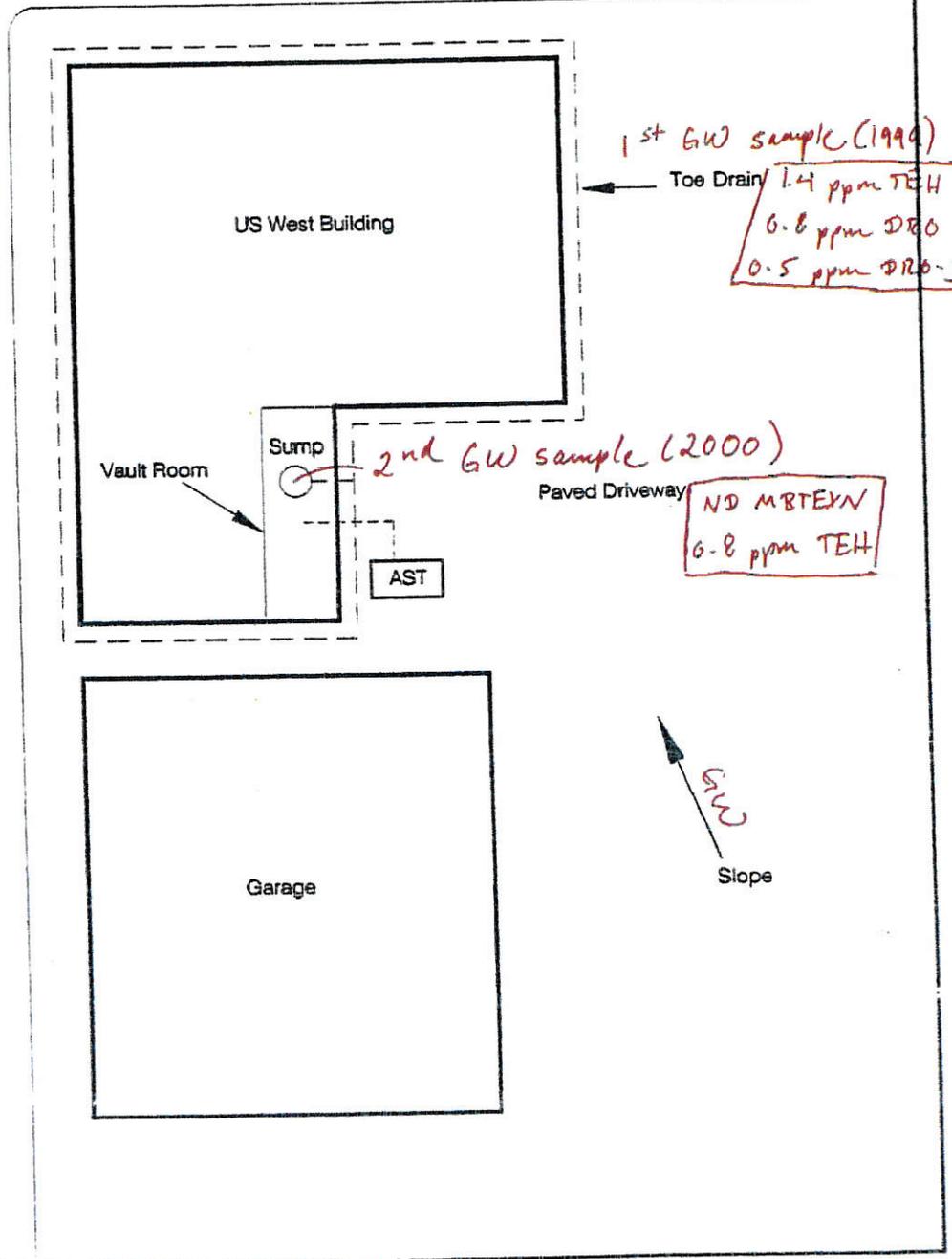
Information for this site was limited to a single letter from DEQ stating the No Further Corrective Action is Required. The letter didn’t provide information about a test pit or ground water. The letter is dated September 13, 1994.

Site 5108782 – Qwest Shelby Central – 330 1st St S

Information for this site consisted of the DEQ Petroleum Release Close-out form and support documents and the DEQ notice that no further action is required. The Close-out form and supporting information is dated May 29, 2002. The information indicated that groundwater was approximately 3' bgs. Groundwater was collected from a "toe drain" that drains water from underneath the building. A diagram of the building and sample points is included in Exhibit B. The ground water was analyzed for petroleum hydrocarbons both in 1999 and 2000 ultimately resulting in the DEQ's notice of no further action. In addition to the toe drain a sump was mentioned. "Groundwater moves through the toe drain to the sump, where it is pumped out to the sanitary sewer".

FIRST STREET SOUTH

THIRD AVENUE



1st GW sample (1999)
 Toe Drain 1.4 ppm TEH
 6.8 ppm DRB
 0.5 ppm DRB-D

2nd GW sample (2000)
 ND MBTEXN
 6.8 ppm TEH

September 1999



Not to Scale

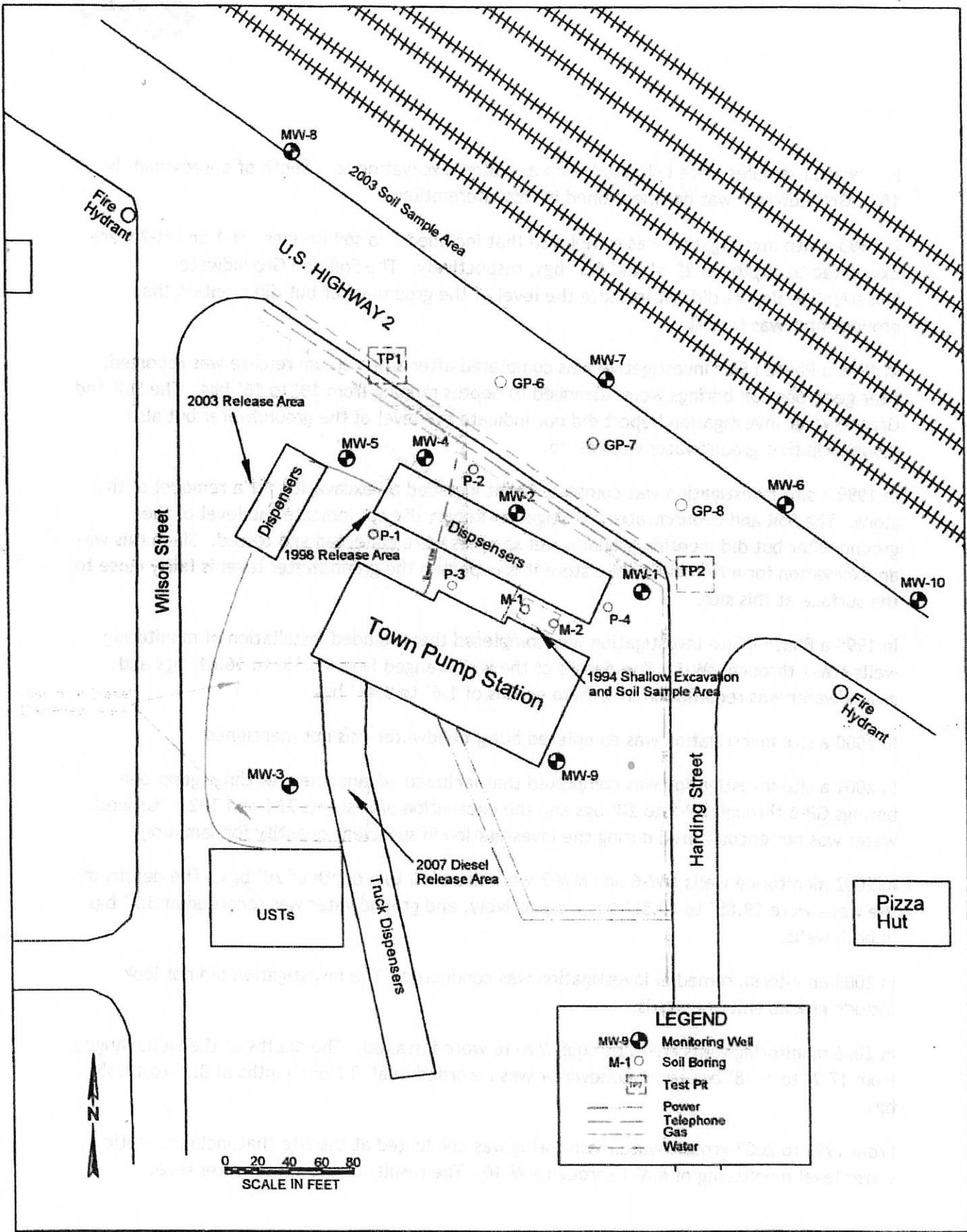
MAXIM 9911741

Site Sketch
 US West Shelby Dial Facility
 Shelby, Montana
 FIGURE 1



5109749 – Town Pump – 1350 W Roosevelt Hwy

Information for this site was made up of several hundred pages in the form of a Soil and Ground Water Investigation Report completed by Olympic Technical Services, Inc for Town Pump. The report is dated August 2008. The report indicates that ground water monitoring and soils investigation have been taking place on this site since at least 1995. Locations of the soil sample areas, petroleum release areas, test pits, soil borings, and monitoring wells that are discussed below are shown on Figure 2 in Exhibit B.



Olympus Technical Services, Inc.

SITE MAP WITH SOIL BORING AND MONITORING WELL LOCATIONS
TOWN PUMP FACILITY
SHELBY, MONTANA

FIGURE
2



In 1994 soil samples were collected from a shallow excavation to a depth of approximately 18". Groundwater was not mentioned in this information.

In 1995 a site investigation was completed that included two soil borings. M-1 and M-2 were excavated to depths of 29.5' and 8.5' bgs, respectively. The Soil and Groundwater Investigation Report did not indicate the level of the groundwater but did mention that groundwater was tested.

In 1998 a Phase I Site Investigation was completed after a petroleum release was reported. Four geoprobe soil borings were advanced to depths ranging from 10' to 16' bgs. The Soil and Groundwater Investigation Report did not indicate the level of the groundwater but also mentioned that groundwater was tested.

In 1999 a site investigation was completed that included an excavation for a remodel of the store. The Soil and Groundwater Investigation Report did not indicate the level of the groundwater but did mention groundwater samples were collected and tested. Since this was an excavation for a remodel of the store it is expected the groundwater level is fairly close to the surface at this site.

In 1999 a Phase II Site Investigation was completed that included installation of monitoring wells MW-1 through MW-5. The depths of the wells ranged from 16.35' to 16.61' bgs and groundwater was recorded in all 5 from depths of 1.6' to 4.43' bgs.

In 2000 a site investigation was completed but groundwater was not mentioned.

In 2001 a site investigation was completed that included advancement of three geoprobe borings GP-6 through GP-8 to 20' bgs and the excavation of test pits TP1 and TP2. "Ground water was not encountered during the investigation in sufficient quantity for sampling".

In 2002 monitoring wells MW-6 and MW-7 were installed to a depth of 20' bgs. The depths of the wells were 19.85' to 19.55' bgs, respectively, and groundwater was recorded at 3.5' bgs in both wells.

In 2003 an Interim remedial investigation was conducted. The investigation did not look include ground water analysis.

In 2006 monitoring wells MW-8 through MW-10 were installed. The depths of the wells ranged from 17.2' to 2018' bgs and groundwater was recorded in all 3 from depths of 3.3' to 14.35' bgs.

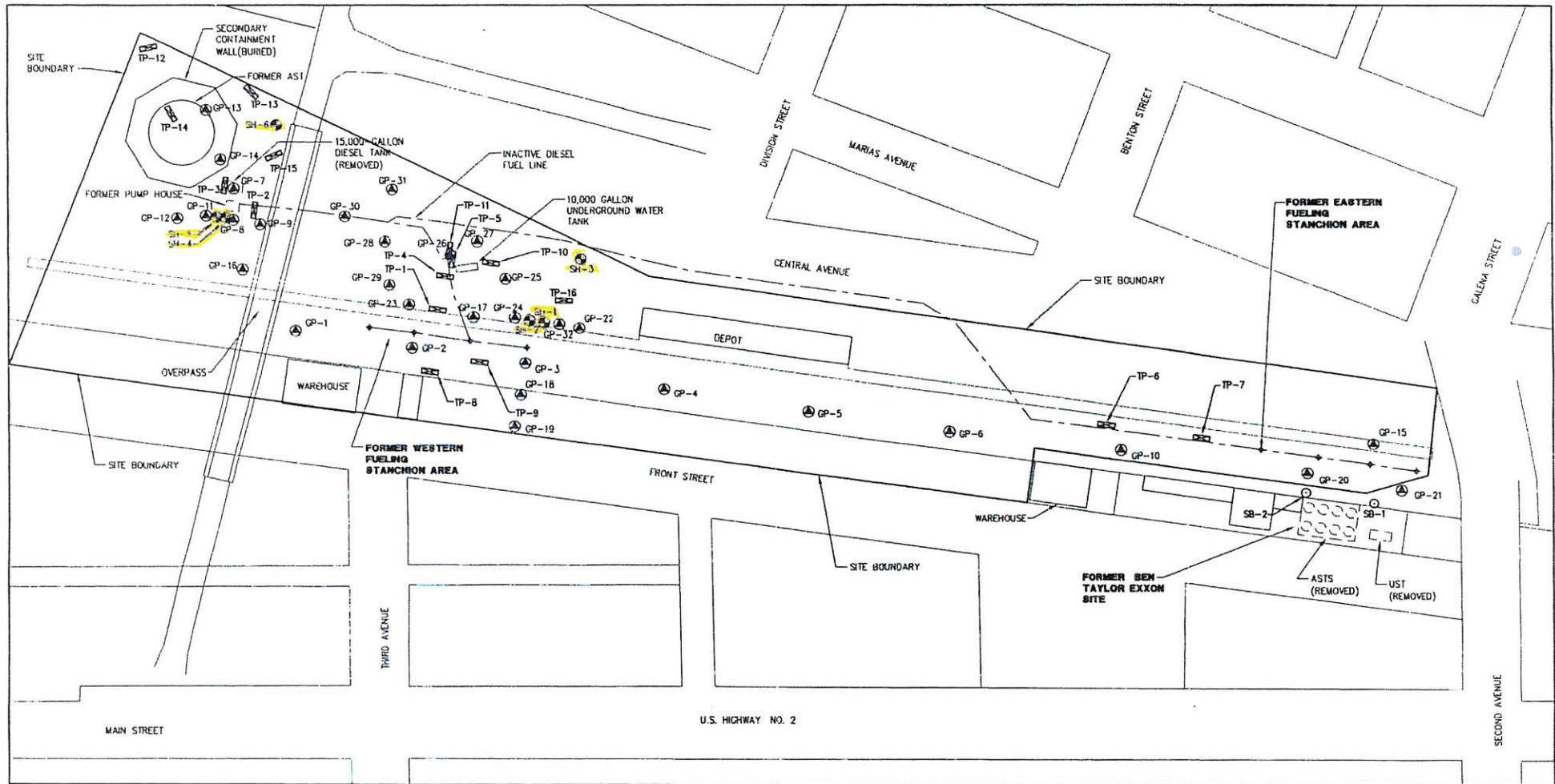
From 1998 to 2007 ground water monitoring was conducted at the site that included static water level monitoring of MW-1 through MW-10. The results of the static water level



measurements are included in Exhibit B. The static water levels range from 0.10' bgs to 13.63' bgs.

[5109633 – BN Shelby Fueler – Front St](#)

Information for this site was made up of several hundred pages in the form of a Voluntary Cleanup Plan completed by Kennedy/Jenks Consultants for BNSF Railway Company. The file is dated August 31st, 2007. The cleanup plan indicates that testing, monitoring and cleanup operations have been in place on this site for several decades. Locations of the test pits, soil borings, and monitoring wells that are discussed below are shown on Figure 2 in Exhibit B.

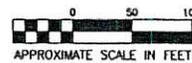


LEGEND:

- ⊕ SOIL CORING LOCATION
- ⊕ TP-7 TEST PIT LOCATION
- SB-1 SOIL BORING LOCATION
- ⊕ SH-5 MONITORING WELL LOCATION
- ⊕ FORMER FUELING STANCHION LOCATION

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. REFERENCE: GREAT NORTHERN RAILWAY, JUNE 1979, SHELBY NO. 1 STATION PLAT, TOOLE COUNTY, MONTANA



Kennedy/Jenks Consultants

BURLINGTON NORTHERN FUELING FACILITY
SHELBY, MT

**SITE FEATURES AND CHARACTERIZATION
SAMPLING LOCATIONS**

0796021.06\VCP\P06SK002

In 1987 a site investigation was conducted consisting of 10 test pits, TP-1 through TP-10 to depths ranging from 3 to 9 feet bgs. “The 10 test pits were advanced for observation of soil conditions only. No samples were collected.” The test pit logs were reviewed. Groundwater was encountered in TP-1 and TP-7 through TP-10. Groundwater was present and at times flowing in a layer of “Cinder”. The test pit logs showing groundwater are included in Exhibit B.

In 1989 test pit TP-11 was excavated to a depth of 9.5 feet bgs. The soils were tested for petroleum hydrocarbons. The test pit log was reviewed. Groundwater was not encountered in this test pit.

In 2003 soil borings GP-1 through GP-31 were advanced to depths ranging from 4 to 30 feet bgs. The bore logs were reviewed for groundwater information but only revealed moisture but no groundwater.

In June of 2004 soil borings GP-32 and SH-1 through SH-6 were advanced to depths ranging from 8 to 16 feet bgs. SH-1 through SH-6 we completed as monitoring wells.

In July of 2004 groundwater samples were collected from wells SH-1, SH-2, SH-4 and SH-5. “The wells were not purged because very little water was present in the casings and did not recharge at a sufficient rate.” Groundwater was recorded in SH-1 at 2’ bgs, SH-2 at 12’ bgs, SH-4 at 5’ bgs, and SH-5 at 13’ bgs. Groundwater was not present in SH-3 or SH-6. The report indicates that “water occurrence in onsite monitoring wells appears to be due to stormwater that infiltrates shallow permeable fill or the well screen filter packs”. The water was analyzed for petroleum hydrocarbons. The well completion logs and groundwater analytical results are included in Exhibit B.

In March of 2006 excavations were advanced to remove and dispose of contaminated soils. The excavations did not report additional groundwater information.

The report also included a summary of wells within 0.5 miles of the site. The locations of those wells is included in Exhibit B and includes monitoring wells at what was Moores Truck Stop, Shelby Sign, Mt Salinity Control Assoc., Kleinert William, and the Tool County Shop. A summary of those wells and corresponding depths of groundwater is included on Table 2 in Exhibit B. Six of the total thirty-one wells reported groundwater. The six well logs are also included in Exhibit B.

Conclusion

Following is a table summarizing the available ground water information from the sites discussed above. Also included in the table is information about off-site ground water monitoring that was also included in the reports discussed above.

Groundwater Summary					
Site Information			Test Pit (TP)/Boring (B)/ Monitoring Well (MW) Info		Depth to Groundwater (feet)
Name	Address	Facility ID #	#	Depth (ft)	
Bryans Auto Repair	400 Main Street	51-07144	B	17	10
Fulton Producing Co	127 Main Street	51-00513	TP	12	None Encountered
C Js Chevron	100 Main Street	51-07718	NA	No Info	No GW Info
Qwest Shelby Central	330 1st St S	51-08782	Sump	Shallow	3
Town Pump	1350 W Roosevelt Hwy	51-09749	MW-1	16.61	4.43
			MW-2	16.6	4.28
			MW-3	16.4	3.6
			MW-4	16.35	4.02
			MW-5	16.55	1.6
			MW-6	19.85	3.5
			MW-7	19.55	3.5
			MW-8	19.15	3.55
			MW-9	20.18	14.35
			MW-10	17.2	3.3
BN Shelby Fueler	Front ST	51-09633	TP-1	8.5	None Encountered
			TP-2	6	
			TP-3	6.5	
			TP-4	3.5	
			TP-5	8	
			TP-6	7.5	
			TP-7	7	3
			TP-8	6	3
			TP-9	6	3.75
			TP-10	9	9
			TP-11	9.5	None Encountered
			MW-SH-1	8	2
			MW-SH-2	15	12
			MW-SH-3	8	None Encountered
	MW-SH-4	8	5		
	MW-SH-5	16	13		
	MW-SH-6	8	None Encountered		
	Moore Truck Stop/ Bear Paw Credit Union	Off-site	125369	16	1
	Kleinert William		125370	16	1
	Toole County Shop		88811	40	14
162892			14	4.3	
162886			14	4.7	
	162891		14	4.3	



In summary, beginning in the Main Street area and extending away, water was reported at 10' bgs, then at the intersection of 1st St South and Third Avenue at a sump that pumps into the sanitary sewer system, along Front Street at depths from 2' bgs to 13' bgs, at Bear Paw Credit Union at 1' bgs, and finally at Town Pump at depths from 1.6' bgs to 14.35' bgs.

2969 Airport Road Suite 1B
PO Box 1567
Helena, MT 59624-1567
406 449 7764
kljeng.com



Exhibit A

SysFacID	AltFacilityID	Facility_Name	Facility_Location_Address	Facility_Location_City	Facility_Location_County	ActiveTanks	NonactiveTanks
5104291	51-04291	ARTHUR ADAMSON		SHELBY	TOOLE		1
5106111	51-06111	BEN TAYLOR INC FUEL DEPOT	130 1/2 FRONT ST	SHELBY	TOOLE		6
5102977	51-02977	BENJAMIN & SONS INC	DEVON STAR ROUTE	SHELBY	TOOLE		3
5109833	51-09833	BN SHELBY FUELER	FRONT ST	SHELBY	TOOLE		2
5107144	51-07144	BRYANS AUTO REPAIR	400 MAIN ST	SHELBY	TOOLE		5
5107718	51-07718	C JS CHEVRON	100 MAIN ST	SHELBY	TOOLE		4
5105059	51-05059	CECIL BENJAMIN	DEVON STAR ROUTE	SHELBY	TOOLE		3
5101114	51-01114	CITY COUNTY AIRPORT		SHELBY	TOOLE		3
5112916	51-12916	CITY OF SHELBY	100 Montana Ave	SHELBY	TOOLE		3
5613784	56-13784	CLAYTON CARTER	131 N GRANITE AVE	SHELBY	TOOLE		1
5103477	51-03477	DELMER R BENJAMIN	DEVON STAR ROUTE	SHELBY	TOOLE		2
5107541	51-07541	DICK IRVIN INC UST	US HIGHWAY 2 W	SHELBY	TOOLE		1
5111165	51-11165	ED GALLUP	UNDERDAHL RD	SHELBY	TOOLE		1
5103342	51-03342	EILEEN TORGERSON	961 TURNER AVE	SHELBY	TOOLE		1
5101623	51-01623	FRANSON FARM DUNKIRK		SHELBY	TOOLE		1
5110124	51-10124	FRETHEIM FARM		SHELBY	TOOLE		1
5100513	51-00513	FULTON PRODUCING CO	127 MAIN ST	SHELBY	TOOLE		1
5106803	51-06803	HILINE REDI MIX LLC	289 1ST ST SE	SHELBY	TOOLE		1
5113153	51-13153	HOWARDS PIZZA	649 OILFIELD AVE	SHELBY	TOOLE		4
5106805	51-06805	I & T TRANSER & STORAGE DUNKIRK	US HIGHWAY 2 W	SHELBY	TOOLE		1
5101384	51-01384	JABEZ W ROGERS		SHELBY	TOOLE		1
5105538	51-05538	JAMES OEDEWALDT	820 5TH ST S	SHELBY	TOOLE		1
5104592	51-04592	JOHANNSEN FARMS INC		SHELBY	TOOLE		1
5111881	51-11881	JURGEN A WIGEN	175 LOHR RD	SHELBY	TOOLE		1
5102885	51-02885	LESLIE W BENJAMIN	DEVON STAR ROUTE	SHELBY	TOOLE		2
5103700	51-03700	LUNDA READY MIX	291 1ST ST S	SHELBY	TOOLE		1
5113399	51-13399	LYNS BODY SHOP	304 Mineral St	SHELBY	TOOLE		1
5106113	51-06113	MAIN STREET EXXON	101 E MAIN ST	SHELBY	TOOLE	4	5
5109141	51-09141	MALMSTROM AFB P 1	INTERSTATE 15	SHELBY	TOOLE		1
5109150	51-09150	MALMSTROM AFB P 10	INTERSTATE 15	SHELBY	TOOLE		1
3709148	37-09148	MALMSTROM AFB P 8	INTERSTATE 15	SHELBY	TOOLE		1
3709149	37-09149	MALMSTROM AFB P 9	INTERSTATE 15	SHELBY	TOOLE		1
5109158	51-09158	MALMSTROM AFB Q 17	ROAD 417	SHELBY	TOOLE		1
5109159	51-09159	MALMSTROM AFB Q 18	US HIGHWAY 2	SHELBY	TOOLE		1
5109161	51-09161	MALMSTROM AFB Q 20	US HIGHWAY 2	SHELBY	TOOLE		1
5100009	51-00009	MARIAS RIVER ELECTRIC COOP INC	910 W ROOSEVELT HWY	SHELBY	TOOLE		2
5100433	51-00433	MARIAS VALLEY GOLF & COUNTRY CLB		SHELBY	TOOLE		1
5101617	51-01617	MARSHALL FARMS INC		SHELBY	TOOLE		2
5104037	51-04037	MDOT SHELBY	INTERSTATE 15 & US HIGHWAY 2	SHELBY	TOOLE		3
5104292	51-04292	MELVIN ADAMSON & SON		SHELBY	TOOLE		1
5101165	51-01165	MONTANA POWER CO SHELBY CAMP		SHELBY	TOOLE		2
5110669	51-10669	MOORES TRUCK STOP	950 W ROOSEVELT HWY	SHELBY	TOOLE		7
5100104	51-00104	NOON'S 573	602 W Roosevelt Hwy	SHELBY	TOOLE	3	
5100294	51-00294	OEDEWALDT FARM	825 6TH ST S	SHELBY	TOOLE		1
5613799	56-13799	OLD TOOLE COUNTY HOSPITAL	112 1ST ST S	SHELBY	TOOLE		1
5104477	51-04477	PETES NORTHSIDE GARAGE	807 OILFIELD AVE	SHELBY	TOOLE		2
5113183	51-13183	PETROLANE	761 Oilfield Ave	SHELBY	TOOLE		4
5108782	51-08782	QWEST SHELBY CENTRAL OFFICE	330 1ST ST S	SHELBY	TOOLE		1
5101513	51-01513	R E SVARE	151 1ST ST S	SHELBY	TOOLE		1
5100908	51-00908	RAINBOW FORD & MERCURY INC	461 MAIN ST	SHELBY	TOOLE		2
5101236	51-01236	RAWLIN M ZELL		SHELBY	TOOLE		2
5112831	51-12831	RICHARD THULL	731 BENTON AVE	SHELBY	TOOLE		1
5102927	51-02927	ROGER A JACOBSON		SHELBY	TOOLE		1
5104173	51-04173	ROGER D FOWLER		SHELBY	TOOLE		1
5106405	51-06405	RONALD B MUNSON FARMS INC	760 MARIAS AVE	SHELBY	TOOLE		1
5105227	51-05227	SEC 23 T32N R2W		SHELBY	TOOLE		1
5101487	51-01487	SHELBY AUTOCRAFT SHOP	824 OILFIELD AVE	SHELBY	TOOLE		2
5104224	51-04224	SHELBY BOTTLING CO INC	304 11TH AVE N	SHELBY	TOOLE		1
5613871	56-13871	SHELBY DISTRIBUTORS LLC	130 W CENTRAL AVE	SHELBY	TOOLE		2
5113207	51-13207	SHELBY GATHERING PARTNERS		SHELBY	TOOLE		1

5108783	51-08783	SHELBY JUNCTION RADIO BLDG		SHELBY	TOOLE			1
5113716	51-13716	SHELBY PETROLEUM REFINERY SITE		SHELBY	TOOLE			6
5101699	51-01699	SHELBY SCHOOL DIST 14 BUS BARN	133 6TH AVE S	SHELBY	TOOLE			1
5103266	51-03266	SHELBY SHOP		SHELBY	TOOLE			3
5100657	51-00657	SHELBY SHOP STORAGE	FRONTAGE ROAD N	SHELBY	TOOLE			2
6015007	60-15007	SIMONS PETROLEUM	HIGHWAY 2	SHELBY	TOOLE			1
5108629	51-08629	SIMONS PETROLEUM INC 5108629	530 W ROOSEVELT HWY	SHELBY	TOOLE	4		6
5108630	51-08630	SIMONS PETROLEUM INC 5108630	531 W Roosevelt Hwy	SHELBY	TOOLE			4
5112333	51-12333	STANDARD OIL CO	5TH AVE N	SHELBY	TOOLE			5
5105850	51-05850	STANLEY ROGERS		SHELBY	TOOLE			1
5107540	51-07540	STANLEY WATKINS	125 W CENTRAL AVE	SHELBY	TOOLE			1
5103630	51-03630	STEVEN W AHRENS		SHELBY	TOOLE			1
5106112	51-06112	TAYLOR TRUE VALUE HARDWARE STORE	614 W Roosevelt Hwy	SHELBY	TOOLE			10
5106040	51-06040	THEONNES WILKINS GAS PLANT		SHELBY	TOOLE			1
5110056	51-10056	TOOLE COUNTY HOSP NURSING HOME	640 PARK AVE	SHELBY	TOOLE			1
5101961	51-01961	TOOLE COUNTY ROAD DEPT UST	550 PARK DR	SHELBY	TOOLE			2
5104305	51-04305	TOOLE COUNTY SHERIFF	235 Deer Lodge Ave	SHELBY	TOOLE			2
5109749	51-09749	TOWN PUMP INC SHELBY	1350 W Roosevelt Hwy	SHELBY	TOOLE	9		
5105814	51-05814	TRAVIS P COLLIER		SHELBY	TOOLE			1
5103081	51-03081	UNKNOWN SHELBY		SHELBY	TOOLE			1
5107786	51-07786	VERN FLICKINGER	419 GALENA ST	SHELBY	TOOLE			1
5105919	51-05919	WESTERMARK GRAIN CORP	US HIGHWAY 2	SHELBY	TOOLE			1
5111320	51-11320	WILLIAM WHITE	125 WHITE RD	SHELBY	TOOLE			1
5100724	51-00724	WOLFE BROTHERS RANCH & FARM	924 Benjamin Rd	SHELBY	TOOLE			8

Exhibit B



Site 5107144 – Bryans Auto Repair – 400 Main Street

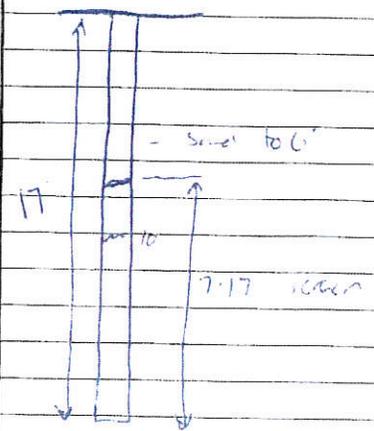
ENVIRONMENTAL LOG OF EXPLORATION BORING

Client Name: <u>DEG</u>	Boring / Monitoring Well Number: <u>SB/mw-1</u>
Project Name: <u>Former Bryan's Auto Repair</u>	Boring Location: <u>In front of building near office door</u>
Project Number: <u>6F13024.7</u>	
Drill Type: Soil - Rock -	Date Boring Started: <u>6-27-16</u>
Drilled By: <u>Kevin</u> Of: <u>Belend</u>	Date Boring Completed: <u>6-27-16</u>
Logged By: <u>Ross</u> Of: <u>CTA</u>	DTW (if present): <u>~10'</u> Following Day:
Comments:	

Sheet of

Depth (feet)	Lithology Classification & Description	Sample Symbol	Sample Interval (feet bgs)	Length Recovered (feet)	Blow Counts (LSS or SSS)				Headspace		Visual & Olfactory (y/n)		
					1st 6"	2nd 6"	3rd 6"	4th 6"	Sample Interval (feet bgs)	Total VOC (ppm)	Discoloration	Odor	Other
					Sample Interval (feet bgs)		Total VOC (ppm)						
0-2	Gravel	LSS	2-4	1					2-4	190	x	*	
* 2-4	Gravel to sandy clay some black staining at 4'	SSS	4-6	8"					4-6	14.6			
4-6	Sandy clay	LSS	6-8	15					6-8	6.7			
6-8	Silty clay	SSS	8-10	15					8-10	3.2			
* 8-10	Silty clay - 10' sand, clay (matrix)	LSS	10-12	2					10-12	7.9			
10-12	10' sandy clay (matrix) silty clay	SSS	12-14	1					12-14	3.7			
12-14	Clay	LSS	14-16	3					14-16	0.3			
14-16	Silty clay some rock at 16'	SSS	16-18	1					16-18	0.7			
* 16-18	Clay		16-20						16-20				
18-20	Y												

* Samples - Duplicate from Hot Spot





Site 5100513 – Fulton Producing Co – 127 Main St

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
Solid and Hazardous Waste Bureau
Underground Storage Tank Program

STAN STEPHENS, GOVERNOR (406) 444-5970

FAX #(406) 444-1499



STATE OF MONTANA

OFFICE 836 Front Street
LOCATION: Helena, Montana

MAILING Cogswell Building
ADDRESS: Helena, MT 59620

January 25, 1993

Bill Fulton
P.O. Box 373
Billings, MT 59103

Re: No Further Corrective Action Required For Petroleum release at Fulton Producing Company, 127 Main Street, Shelby; Facility ID# 51-00513.

Dear Mr. Fulton:

The Montana Department of Health and Environmental Sciences (MDHES) Underground Storage Tank Program has reviewed information associated with a petroleum release at the above-referenced location. Based on the available information, it appears that the corrective action was proper and that no further investigation or cleanup activities are needed. You may still be responsible for any damages not yet identified resulting from leaks, spills, or improper closure of the tank(s).

The decision that no further corrective action is required is based on the results of a site investigation. A test pit completed at the site revealed weathered gasoline contamination beginning at approximately 4 feet below ground surface. The contamination extended to approximately 12 feet below ground surface but did not reach ground water. Based upon the soil type and the lack of receptors near by, the MDHES decided to leave the contamination in place.

The MDHES has removed your "leak file" from active status in the filing system. We will keep your file in a separate "resolved" section, so that if you need any information in the future or new problems with your site arise, then we can access the information easily.

If you have any questions concerning this letter please contact this office at (406) 444-5970. We appreciate your cooperation concerning corrective action requirements.

Sincerely,

A handwritten signature in cursive script, appearing to read "Pat Newby".

Pat Newby
Environmental Specialist

633.PJN

cc: Jean Riley, Executive Director,
PTRCB
Facility file

Site 5107718 – C Js Chevron – 100 Main Street

16 9-94

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
Environmental Remediation Division
Underground Storage Tank Program
(406) 444-5970

FAX # (406) 444-1902



STATE OF MONTANA

OFFICE 2209 PHOENIX AVE.
LOCATION: HELENA, MONTANA

MAILING PO BOX 200901
ADDRESS: HELENA, MT 59620-0901

September 13, 1994

Frank Nickol
410 Sullivan Crossing Road
Columbia Falls, MT. 59912

Subject: No Further Corrective Action Required for Petroleum Release at CJ Chevron,
Shelby; Facility ID# 51-07718

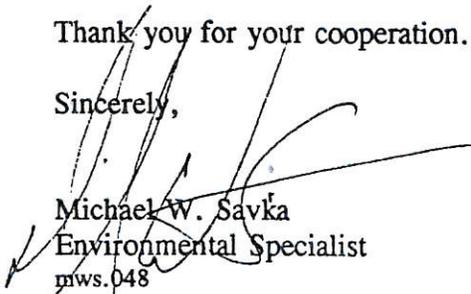
Dear Mr. Nickol:

Based on the available information, the Department of Health and Environmental Sciences (DHES) does not require any additional investigative or clean-up measures for the petroleum release at the subject site. The information shows that while minor contamination remains in the ground at this site, it does not appear that public health and the environment have been adversely affected.

Your leak file has been moved from the 'confirmed release' section to the 'resolved' section of the DHES files. However, the owner/operator of this site will be responsible for any future problems created by leaks, spills or improper closure of the tank system.

Thank you for your cooperation.

Sincerely,


Michael W. Savka
Environmental Specialist
mws.048

cc: PTRCB
Facility File

Site 5108782 – Qwest Shelby Central – 330 1st St S

MONTANA DEQ, PETROLEUM RELEASE SECTION
PETROLEUM RELEASE CLOSE-OUT FORM
(to be completed by DEQ-PRS staff)

FAC. I. . 51-08782
 RELEASE #: 3805

SITE NAME: Shelby Dial Exchange Building
 DATE OF DISCOVERY: September 9, 1999
 LOCATION: 1/4, 1/4, Sec. , T , R
 (Street) 330 1st Street S.
 (County) Toole (City) Shelby (ZIP) 59474
 PROJECT MANAGER: Jessi Belston
 RISK ANALYSIS RANKING: low
 DEQ PRIORITY RANKING NUMBER: 15
 CONSULTANT NAME: Maxim
 CONTAMINANT TYPE: Gas , Diesel x, Other
 SOURCE: UST , AST , Piping x, Spill
 Other
 Estimated volume of release (if known): Gallons
 CONTAMINANT FOUND IN: Soil , Groundwater x
 SOIL PROFILE: unknown

GROUNDWATER: Depth to: less than 3'
 GW flow direction: NW
 How determined? Surface topography

POTENTIAL RECEPTOR: (elaborate how investigated in Summary)
 Check if: Thrtnd Impctd Invstgtd Dist./Dpth.

Wells	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>none on property</u>
Groundwater	<u>No</u>	<u>Yes</u>	<u>Yes</u>	<u>~3'</u>
Surface Water	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>not in vicinity</u>
Basements	<u>No</u>	<u>No</u>	<u>Yes</u>	<u>on property</u>
Utility Corridor	<u>No</u>	<u>No</u>	<u>No</u>	<u>100'</u>
Property Boundary	<u>No</u>	<u>No</u>	<u>No</u>	<u>100'</u>
Other (specify)	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Are THIRD-PARTY CONCERNS Addressed? yes
 EX-SITU Soil Remediation: Landfill , Landfarm,
 Quantity (cu. yds.): , Other IN-SITU

Remediation: VES , Air Injection ,
 Other

SOURCE REMOVED? Abandoned in place- no longer in use

PLUME: Plume Expanding? , Shrinking? , Static?
 How determined?

CASE HISTORY (attach maps and additional pages as necessary):

On September 9, 1999, petroleum contamination was found in a water sample collected from a toe drain that drains water from underneath the building (GW very shallow- < 3'). Sample showed 1.4 ppm TEH, 0.8 ppm DRO, and 0.5 ppm DRO-D. In November 1999, Maxim collected another sample from the toe drain and found no detectable concentrations of EPH. Release was submitted for closure based on low concentrations of analytes in the first sample and no detectable EPH in the second sample. Release was denied closure based on lack of MBTEXN analysis.

On May 15, 2000, sump was sampled and analyzed for VPH and EPH screen. Results showed 0.8 ppm TEH and no detectable levels of MBTEXN.

This release is recommended for closure based on the following: 1) Final GW sample results were either non-detect or below RBSLs for all constituents; 2) Toe drain/sump drainage system effectively catches possible groundwater contaminants because it acts as a cone of depression and draws all water from beneath the building; 3) Sump is located close enough to contaminant source to be used as an accurate indicator of groundwater conditions; 4) Groundwater moves through the toe drain to the sump, where it is pumped out to the sanitary sewer, so any residual contamination will be removed at the treatment plant



5109749 – Town Pump – 1350 W Roosevelt Hwy

02/13/09
154443

SOIL AND GROUND WATER INVESTIGATION REPORT

**Town Pump
1350 US Highway 2
Shelby, Montana
Facility ID# 51-09749, Release# 3440**

Prepared for:

**Mr. Doug Dodge
Travel Plazas of Montana, Inc.
P.O. Box 6000
Butte, MT 59701**

August 2008

Olympus WO# A1545



Olympus Technical Services, Inc.

**765 Colleen St.
Helena, MT 59601
Phone: (406) 443-3087**

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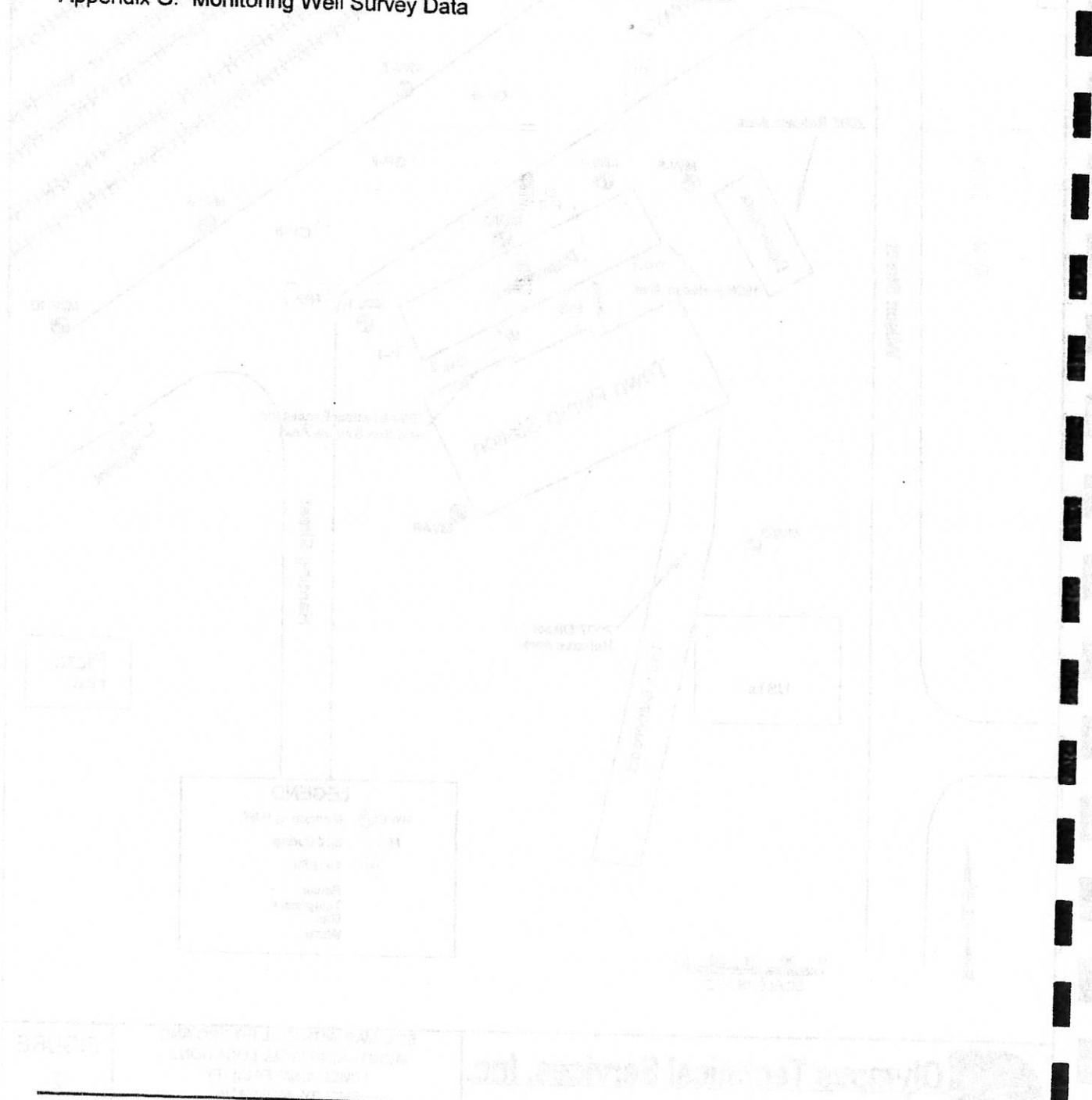
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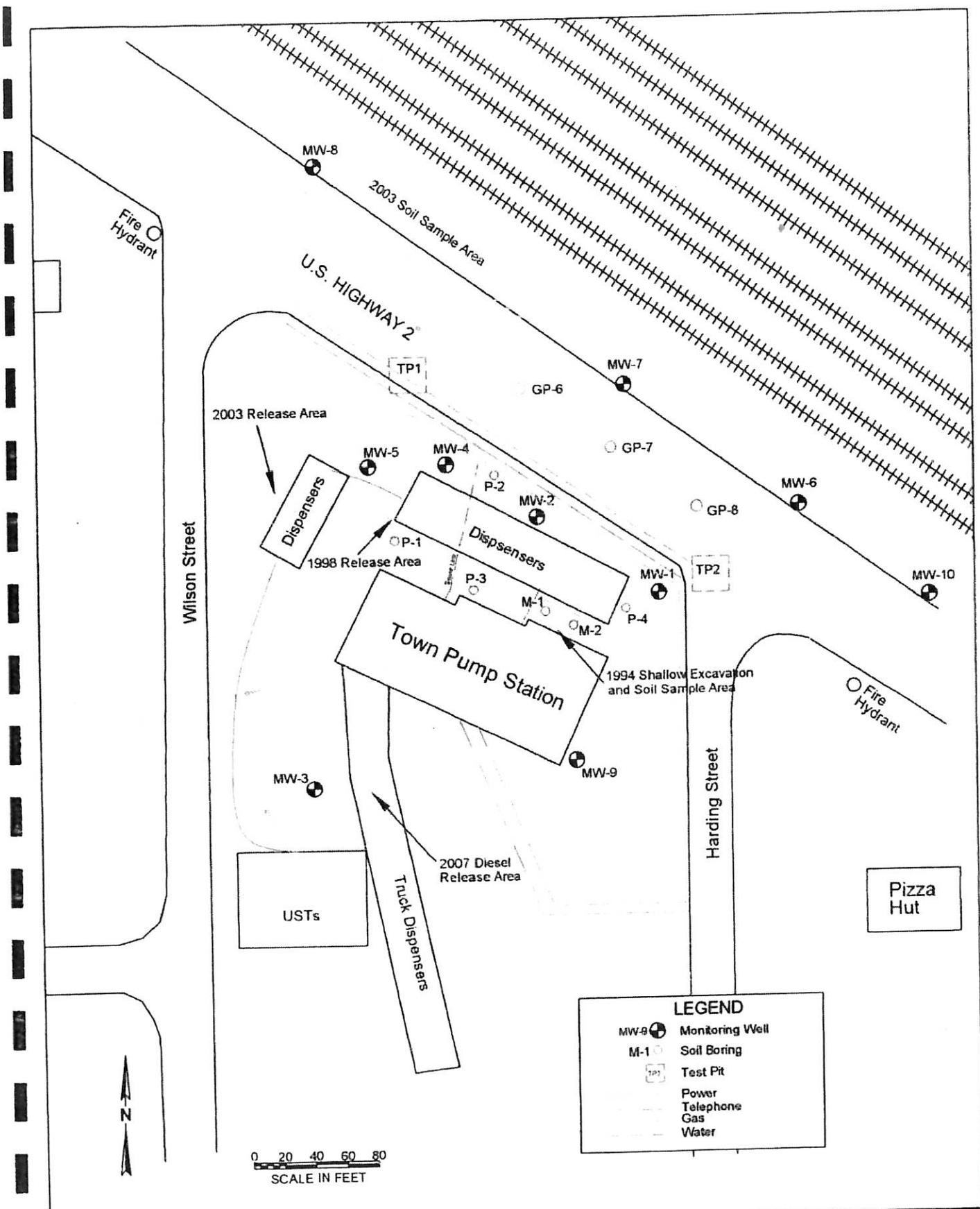
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- Appendix A. IGI Soil Sample Report 2001, Figures 1 and 2
- Appendix B. Neil Consultant's Immediate Response Report, 2003 Site Map, and IGI's Interim Remedial Investigation Report, 2003 Site Map
- Appendix C. IGI Corrective Action Report, 2006 Site Map
- Appendix D. GWIC Registered Wells within a One-Mile Radius of the Town Pump Site
- Appendix E. Soil Boring and Monitoring Well Logs
- Appendix F. Laboratory Analytical Reports and Data Validation Forms
- Appendix G. Monitoring Well Survey Data





LEGEND

- MW-8 Monitoring Well
- M-1 Soil Boring
- TP1 Test Pit
- Power
- Telephone
- Gas
- Water

0 20 40 60 80
SCALE IN FEET

secured with flush-grade monuments cemented in place. A locking well cap was placed on each well. The wells were developed by bailing and surveyed by Cicon and Associates. Survey elevations are based on a local benchmark and incorporated into the Town Pump facility well network.

2.3 Soil Samples

Continuous soil samples were collected during boring advancement and split in the field at two-foot depth intervals for field screening and laboratory analyses. Field screening for organic vapors was conducted using an organic vapor analyzer (OVA). Soil samples collected for laboratory analyses were collected into laboratory supplied jars, stored on ice, and submitted to Energy Laboratories (Energy Labs) in Helena, Montana for VPH and EPH analyses. Soil samples from the following borings and depths (feet BGS) were selected for laboratory analyses:

- MW-8 (13-15)
- MW-9 (11-13)
- MW-10 (12.5-14.5)

The soil sample analytical results are discussed in section 4.3 of this report.

3.0 GROUND WATER MONITORING

Semi-annual ground water monitoring was conducted by Olympus in December 2006 and in June 2007. Ground water monitoring included the measurement of static water levels and the collection of ground water samples from the ten Site monitoring wells. Static water levels were measured using an electronic water level probe to establish ground water flow direction and hydraulic gradient. Ground water samples were collected following Olympus' standard operating procedures. Ground water was purged from each well using clean polyethylene disposable bailers prior to sample collection. During purging, a field analysis was performed for ground water parameters of dissolved oxygen (DO), oxidation reduction potential (ORP), specific conductivity, pH, and temperature and the data are listed on ground water sample information forms provided in Appendix F. Upon parameter stabilization, ground water samples were collected into laboratory supplied jars, stored in a cooler on ice, and transported to Energy Labs under proper chain-of-custody procedure.

4.0 INVESTIGATION RESULTS

4.1 Monitoring Well Survey

Monitoring wells MW-8, MW-9, and MW-10 were surveyed into the existing well network by Cicon & Associates, Chester, Montana, who conducted previous well elevation surveys at the Site. The survey data are provided in Appendix G and the well elevation data are listed in Table 4. The survey was based on a local benchmark near the Site. Latitude and longitude data are referenced to the North American Datum 1983 geographic coordinate system.

Table 4. Ground Water Elevations (amsl)

Well ID Elevation (ft amsl)	Date	Depth to Water (bgs)	Ground Water Elevation (ft)
MW-1 3293.87	8/22/1999	1.83	3292.04
	1/10/2000	3.86	3290.01
	4/11/2000	5.08	3288.79
	7/7/2000	2.87	3291.00
	11/27/2000	4.59	3289.38
	1/17/2001	5.88	3287.99
	5/23/2001	3.95	3289.92
	9/25/2001	5.50	3288.37
	12/18/2001	5.00	3288.87
	3/18/2002	6.25	3287.62
	6/18/2002	2.80	3291.07
	8/30/2002	1.50	3292.37
	12/12/2002	4.22	3289.65
	8/12/2003	2.83	3291.04
	4/15/2004	3.70	3290.17
	12/13/2006	4.43	3289.44
6/27/2007	2.83	3291.04	
MW-2 3293.61	8/22/1999	1.45	3292.16
	1/10/2000	2.55	3291.06
	4/11/2000	2.19	3291.42
	7/7/2000	4.50	3289.11
	11/27/2000	4.40	3289.21
	1/17/2001	5.51	3288.10
	5/23/2001	3.20	3290.41
	9/25/2001	3.06	3290.55
	12/18/2001	4.70	3288.91
	3/18/2002	unable to access	nm
	6/18/2002	1.80	3291.81
	8/30/2002	2.00	3291.61
	12/12/2002	3.75	3289.86
	8/12/2003	2.23	3291.38
	4/15/2004	2.74	3290.87
	12/13/2006	4.28	3289.33
6/27/2007	2.38	3291.23	
MW-3 3299.62	8/22/1999	13.63	3285.99
	1/10/2000	4.65	3294.97
	4/11/2000	5.94	3293.68
	7/7/2000	5.35	3294.27
	11/27/2000	4.71	3294.91
	1/17/2001	6.99	3292.63
	5/23/2001	5.22	3294.40
	9/25/2001	2.35	3297.27
	12/18/2001	4.20	3295.42
	3/18/2002	5.74	3293.88
	6/18/2002	4.80	3294.82
8/30/2002	1.28	3298.34	

Table 4. Ground Water Elevations (amsl)

Well ID Elevation (ft amsl)	Date	Depth to Water (bgs)	Ground Water Elevation (ft)
	12/12/2002	3.05	3296.57
	8/12/2003	1.73	3297.89
	4/15/2004	2.44	3297.18
	12/13/2006	3.60	3296.02
	6/27/2007	0.83	3298.79
MW-4 3293.01	8/22/1999	1.49	3291.52
	1/10/2000	2.48	3290.53
	4/11/2000	2.00	3291.01
	11/27/2000	4.45	3288.56
	1/17/2001	5.39	3287.62
	5/23/2001	3.51	3289.50
	9/25/2001	2.86	3286.64
	12/18/2001	4.63	3288.38
	3/18/2002	unable to access	nm
	6/18/2002	1.90	3291.11
	8/30/2002	2.00	3291.01
	12/12/2002	3.42	3289.59
	8/12/2003	1.74	3291.27
	4/15/2004	2.25	3290.76
	12/13/2006	4.02	3288.99
	6/27/2007	1.06	3291.95
MW-5 3293.02	8/22/1999	4.61	3288.41
	1/10/2000	3.27	3289.75
	4/11/2000	3.41	3289.61
	7/7/2000	2.87	3291.00
	11/27/2000	3.54	3289.48
	1/17/2001	5.37	3287.65
	5/23/2001	3.66	3289.36
	9/25/2001	1.23	3291.79
	12/18/2001	2.74	3290.28
	3/18/2002	3.42	3289.60
	6/18/2002	3.35	3289.67
	8/30/2002	3.35	3289.67
	12/12/2002	2.04	3290.98
	8/12/2003	1.00	3292.02
	4/15/2004	1.65	3291.37
	12/13/2006	1.60	3291.42
	6/27/2007	0.10	3292.92
MW-6 3292.4	12/12/2002	3.92	3288.48
	8/12/2003	2.83	3289.57
	4/15/2004	3.69	3288.71
	12/13/2006	3.50	3288.90
	6/27/2007	2.64	3289.76

Table 4. Ground Water Elevations (amsl)

Well ID Elevation (ft amsl)	Date	Depth to Water (bgs)	Ground Water Elevation (ft)
MW-7 3293.8	12/12/2002	4.23	3289.57
	8/12/2003	2.95	3290.85
	4/15/2004	3.53	3290.27
	12/13/2006	3.50	3290.30
	6/27/2007	2.75	3291.05
MW-8 3290.15	12/13/2006	3.55	3286.60
	6/27/2007	5.10	3285.05
MW-9 3295.43	12/13/2006	*14.35	3281.08
	6/27/2007	2.73	3292.70
MW-10 3292.62	12/13/2006	3.30	3289.32
	6/27/2007	3.75	3288.87

*data suspect
nm - not measured

4.2 Soil Lithology and Field Screening Results

The general lithology at the Site consists of an upper soil horizon of about five feet of sand and gravel fill material that overlies clay extending to a depth of at least 21 feet BGS (extent of the borings). Interbedded in the clay are thin lenses of more permeable silty sand and gravel. A slight petroleum odor and gray staining was detected within the clay unit at about 14 feet to 17 feet BGS in boring MW-8. Petroleum impacts were not observed in the soil samples collected from borings MW-9 and MW-10.

The OVA results of field screening soil samples collected during boring activities are listed on Table 5 and shown on boring logs provided in Appendix E. Organic vapor concentrations were less than the detection limits of the instrument in soil samples collected from borings MW-9 and MW-10, and organic vapor concentrations were less than 10 ppm in soil samples collected from boring MW-8.

4.3 Soil Analytical Results

Soil samples collected at the ground water interface from soil borings MW-8, MW-9, and MW-10 on October 26, 2006, were submitted to Energy Labs in Helena, Montana for VPH and EPH analyses. The analytical results are listed in Table 1 and the analytical reports are provided in Appendix F. Based on a QA/QC review of the data, the data appear valid. A data validation form is provided in Appendix F.

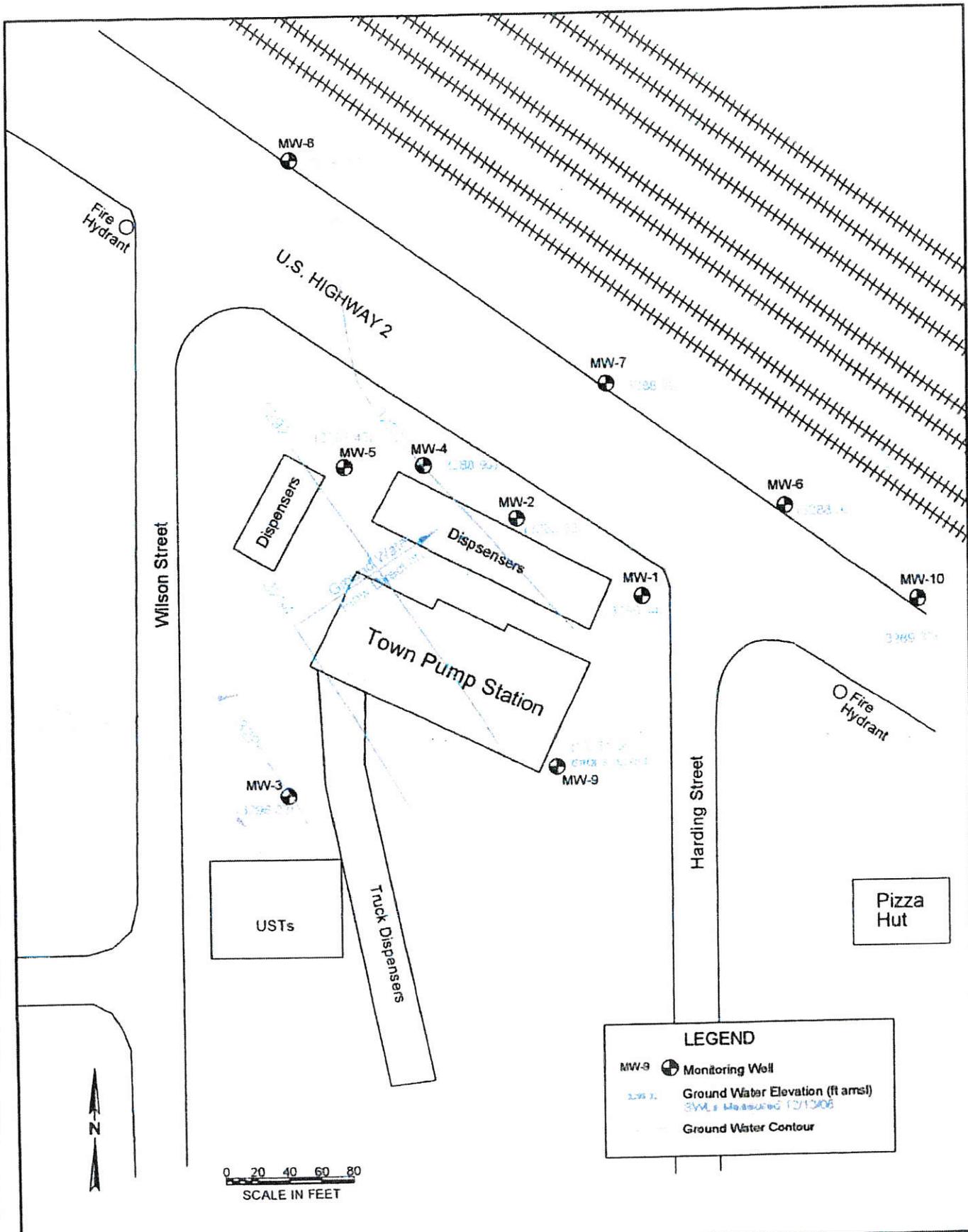
Target analyte concentrations were less than reporting limits in the soil samples collected from borings MW-9 and MW-10. Target analytes were detected in the soil sample collected from boring MW-8 and there was an RBSL exceedance for C9-C10 aromatics. The EPH screen concentration in sample MW-8 exceeded DEQ's screening level and the sample was further analyzed for EPH fractions. EPH fraction concentrations were below RBSLs.

4.4 Ground Water Elevations

Ground water monitoring was conducted by Olympus in December 2006 and June 2007 that included the measurement of static water levels (SWL) in Site monitoring wells. The SWL data are listed in Table 4 and ground water elevation data are posted on potentiometric maps shown on Figures 3 and 4. Ground water is present in the upper perched aquifer system at approximately 1 to 5 feet BGS and generally flows northeast at a hydraulic gradient of about 0.03 feet/foot (ft/ft). These data are consistent with ground water data collected previously at the Site.

4.5 Ground Water Analytical Results

Ground water samples were collected from ten Site monitoring wells in December 2006 and in June 2007 and were submitted to Energy Labs for VPH, EPH, and VOC analyses. The VPH and EPH results are listed in Table 2 and posted next to well locations on Figures 5 and 6. The detected VOC analytes are listed in Table 6. The analytical laboratory reports are provided in Appendix F. Based on a QA/QC review, these data generally appear valid and data validation forms are provided in Appendix F.



**GROUND WATER SAMPLING
INFORMATION FORM**



Sample Information

Sample ID: MW-2 Location: Shelby, Mo
 Label ID: A1545-MW-2 Work Order No.: A1545
 Project Name: Town Pump Shelby Time: 11:00
 Comments: _____ Date: 12/13/06

Sample Collection

Type: Dedicated Disposable
 Non Dedicated
 Device: Bailer Peristaltic Pump
 Submersible Pump Sample Port
 Material: Teflon Polyethylene PVC Stainless Steel
 Other: _____

Comments: _____

Field Measurements

Well Depth: (measured) (well table)
 Well Depth: 16.60 Ft Well Volume: 2 Gal (calculated)
 Depth to Water: 4.28 ft Purge Volume: 6 Gal (3 X well volume)
 Depth of Water: 12.32 ft Volume Purged: 6 Gal (measured purge)

Purge Volume = $(\pi = 3.14) \times (\text{well radius: ft})^2 \times (\text{depth of water: ft}) \times 7.48 \text{ gal/ft}^3$

Comments: _____

Field Parameters

	InSitu <input type="checkbox"/>		ExSitu <input checked="" type="checkbox"/>		
	mg/L	umhos/cm	°C	SU	Mv
Pre Purge	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
1 st Well Volume	DO: <u>*NM</u>	S.C.: <u>10,420</u>	Temp: <u>8.9</u>	pH <u>6.91</u>	ORP: <u>-9</u>
2 nd Well Volume	DO: <u>NM</u>	S.C.: <u>10,160</u>	Temp: <u>8.9</u>	pH <u>6.81</u>	ORP: <u>-98</u>
3 rd Well Volume	DO: <u>NM</u>	S.C.: <u>10,070</u>	Temp: <u>8.9</u>	pH <u>6.89</u>	ORP: <u>U</u>
4 th Well Volume	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
Fe ⁺² :	<u>1.8 mg/l</u>		Nitrate:	<u>ND mg/l</u>	

Comments: _____

Field Comments

ND - Non Detected
 *NM - Not Measured; DO instrument malfunction
 Ur - Value exceeds the instrument limits (-100)
 Collected duplicate sample MW-11 @ 11:30

Sampler: _____ Rob Mahr (printed) _____ 12/13/06 Date

**GROUND WATER SAMPLING
INFORMATION FORM**



Olympus Technical Services, Inc.

Sample Information

Sample ID: MW-4 Location: Shelby, MT
 Label ID: A1545-MW-4 Work Order No.: A1545
 Project Name: Town Pump Shelby Time: 13:00
 Comments: _____ Date: 12/13/06

Sample Collection

Type: Dedicated Disposable
 Non Dedicated
 Device: Bailer Peristaltic Pump
 Submersible Pump Sample Port
 Material: Teflon Polyethylene PVC Stainless Steel
 Other: _____

Comments: _____

Field Measurements

Well Depth: (measured) (well table)
 Well Depth: 16.35 Ft Well Volume: 2 Gal (calculated)
 Depth to Water: 4.02 ft Purge Volume: 6 Gal (3 X well volume)
 Depth of Water: 12.33 ft Volume Purged: 6 Gal (measured purge)

Purge Volume = $(\pi = 3.14) \times (\text{well radius: ft})^2 \times (\text{depth of water: ft}) \times 7.48 \text{ gal/ft}^3$

Comments: _____

Field Parameters

	InSitu <input type="checkbox"/>		ExSitu <input checked="" type="checkbox"/>		
	mg/L	umhos/cm	°C	SU	MV
Pre Purge	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
1 st Well Volume	DO: <u>*NM</u>	S.C.: <u>10,480</u>	Temp: <u>8.9</u>	pH <u>7.16</u>	ORP: <u>Ur</u>
2 nd Well Volume	DO: <u>NM</u>	S.C.: <u>10,470</u>	Temp: <u>8.9</u>	pH <u>7.14</u>	ORP: <u>Ur</u>
3 rd Well Volume	DO: <u>NM</u>	S.C.: <u>10,400</u>	Temp: <u>8.9</u>	pH <u>7.24</u>	ORP: <u>Ur</u>
4 th Well Volume	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
Fe ⁺² :	<u>1.2</u> mg/l		Nitrate:	<u>ND</u> mg/l	

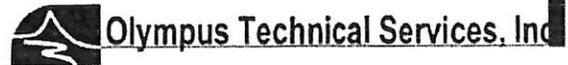
Comments: _____

Field Comments

ND – Non Detected
 *NM – Not Measured; DO instrument malfunction
 Ur – Value exceeds the instrument limits (-100)

Sampler: Rob Mahr (printed) 12/13/06 Date

**GROUND WATER SAMPLING
INFORMATION FORM**



Sample Information

Sample ID: MW-8 Location: Shelby, M
 Label ID: A1545-MW-8 Work Order No.: A1545
 Project Name: Town Pump Shelby Time: 9:0
 Comments: _____ Date: 12/14/06

Sample Collection

Type: Dedicated Disposable
 Non Dedicated
 Device: Bailer Peristaltic Pump
 Submersible Pump Sample Port
 Material: Teflon Polyethylene PVC Stainless Steel
 Other: _____

Comments: _____

Field Measurements

Well Depth: (measured) (well table)
 Well Depth: 19.15 Ft Well Volume: 2.5 Gal (calculated)
 Depth to Water: 3.55 ft Purge Volume: 7.6 Gal (3 X well volume)
 Depth of Water: 15.60 ft Volume Purged: 7.6 Gal (measured purge)

Purge Volume = $(\pi = 3.14) \times (\text{well radius: ft})^2 \times (\text{depth of water: ft}) \times 7.48 \text{ gal/ft}^3$

Comments: _____

Field Parameters

	InSitu <input type="checkbox"/>		ExSitu <input checked="" type="checkbox"/>		
	mg/L	umhos/cm	°C	SU	Mv
Pre Purge	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
1 st Well Volume	DO: <u>*NM</u>	S.C.: <u>16,050</u>	Temp: <u>9.9</u>	pH <u>6.93</u>	ORP: <u>+9</u>
2 nd Well Volume	DO: <u>NM</u>	S.C.: <u>16,390</u>	Temp: <u>10.0</u>	pH <u>6.81</u>	ORP: <u>+8</u>
3 rd Well Volume	DO: <u>NM</u>	S.C.: <u>17,130</u>	Temp: <u>10.0</u>	pH <u>6.90</u>	ORP: <u>+4</u>
4 th Well Volume	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
	DO: _____	S.C.: _____	Temp: _____	pH _____	ORP: _____
Fe ⁺² :	<u>NA</u> mg/l		Nitrate:	<u>NA</u> mg/l	

Comments: _____

Field Comments

_____ ND – Non Detected
 _____ *NM – Not Measured; DO instrument malfunction
 _____ NA- Not Analyzed

Sampler: _____ Rob Mahr (printed) _____ 12/14/06 Date



5109633 – BN Shelby Fueler – Front St