AGRA
Earth & Environmental

AGRA Earth &
Environmental, Inc.
E 520 North Foothills Drive
Suite 600
Spokane, Washington
U.S.A. 99207
Tel (509) 482-0104
Fax (509) 482-0202

30 September 1996

Chevron USA Products Company
6001 Bollinger Canyon Road, Building L
P.O. Box 5004
San Ramon, CA 94583-0804

Attention: Mr. Rene White

Subject: Geoprobe Assessment
Former Chevron Station 9-8944
1323 Lee Boulevard
Richland, Washington

Mr. White:
AGRA Earth & Environmental, Inc. (AEE) is pleased to present this letter report presenting the results of our geoprobe investigation and assessment in the vicinity of the above referenced site. Authorization for our participation in this project was provided by Mr. Rene White under Service Order No. 9011393. Scope of services were completed as outlined in AEE's proposal dated 8 February 1995 (PS-1438).

The scope of services for this phase of the preliminary site assessment consisted of the following:

1) Arrangement of a utility locate at the subject site and the surrounding area utilizing the USA locate service. In addition, all required permits for completion of the exploratory probes in the city right of ways were acquired.

2) Measuring the depth of water within the three existing site monitoring wells and determining the direction of shallow groundwater migration;

3) Completing a subsurface exploration and sampling program using Cascade Drilling Company's Geoprobe to advance 12 probes to depths of 8 to 10 feet below the existing site grade. Soil samples were collected at each probe location;

4) Collecting groundwater samples from all completed explorations;

5) Collecting groundwater samples from the existing site monitoring wells;

6) Analyzing all soil and groundwater samples for purgeable hydrocarbons (gasoline) by Washington State Department of Ecology Method (WTPH-G) and the aromatic hydrocarbons benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method 8020.

7) Preparing this letter report summarizing the analytical testing, our interpretation of the geology/hydrogeology of the site, and delineation of the vertical and lateral extent of the hydrocarbon impacted groundwater and soils.

INTRODUCTION

The subject site is an irregular shaped parcel of land which encompasses approximately one-half acre (24,500 square feet) located at 1323 Lee Boulevard in Richland, Washington (Figure 1). The property margins and the locations of the former and existing structures, including the underground storage tanks (UST), were obtained from a site plan provided to AEE by Chevron U.S.A. Products Company. The approximate site plan, which shows the location of the existing site monitoring wells, is presented in Figure 2.

The area to the south and southeast of the site is primarily residential. The area towards the east, north and west of the property is primarily commercial with intermittent residential areas. The site is bordered on the north by Lee Boulevard, on the west and south by Gillespie Avenue, and on the east by the Law Offices of Houger, Miller and Stein. East of the law offices is an Exxon gas station and west of the subject site, across Gillespie Avenue, is a formers gas station which still contains pump islands and underground storage tanks.

The purpose of this phase of the investigation was to evaluate and delineate subsurface soil and groundwater conditions with respect to petroleum hydrocarbons and to evaluate the extent of hydrocarbons in groundwater, whether migrating onto or off of the subject site.

PRELIMINARY GROUNDWATER CONDITIONS

Depth to groundwater measurements were collected by an AEE representative during our 12 August 1996 site visit. Based upon water level measurements collected during this site visit, the depth to shallow groundwater from the top of casing ranged from 6.40 (MW-2) to 7.89 feet (MW-3). Elevations, based on AEE's top of casing measurements and based on a site relative datum, ranged from 86.68 (MW-3) to 86.91 feet (MW-2). An approximate shallow groundwater gradient of 0.0037 ft/ft (0.37 feet vertical fall in 100 feet horizontal) was calculated, with groundwater flow trending towards the northeast. Figure 2 presents the groundwater gradient direction and groundwater elevations as determined on 12 August 1996. A summary of groundwater elevations collected by AEE is presented in Table 1.

Measurement of groundwater depths at the subject site allowed for the geo-probe investigation to target the sampling of soil at the groundwater interface within the explorations.

SUBSURFACE EXPLORATION

The subsurface exploration program completed during this phase of the investigation consisted of advancing 12 temporary probes (P-1 through P-12) to depths ranging from approximately 7 to 10 feet below grade. All probes were completed on and around the subject site within city right-of-ways. All explorations were completed on 12 August 1996 by Cascade Drilling of Woodinville, Washington. Explorations were advanced utilizing a truck mounted Geo-probe. All explorations were observed by an experienced geologist from our firm. The exploration equipment consisted of 1-inch stainless steel rods which were connected to either a 1-inch inside diameter (I.D.) well screen or a 2-inch split spoon. The split spoon was utilized in borings where soil samples were collected. Typically, the

rods were pushed to the desired soil sampling depth (5 to 6 feet below grade), then a rod (which contained a plug for the end of the split spoon) was released within the split spoon, enabling the soil sample to then be collected within the spoon as the sampler was then driven over the desired sampling interval. After collection of the soil sample, the sampling rods were retrieved and the soil sampler replaced with the water sampler. The rods were then driven back into the subsurface to a depth of approximately 9 feet below grade. For collection of water samples, the 4-foot screen assemblage was pulled back, allowing the screen to be exposed within the substrate.

Soil samples were typically collected at depths of 5 to 7 feet below the existing site grade. Soil samples were collected from all borings at the interpreted groundwater interface. The well screen was typically pushed to a depth of 9 to 10 feet below the existing site grade, allowing groundwater to be collected from the sand bed typically located 6 to 8 feet below the ground surface. Exploration equipment and sampling tools were decontaminated between use in each exploration and between sampling intervals. Soil descriptive logs for the explorations are presented in Attachment A.

GEOLOGY

The study area lies in the east-central part of the Pasco Basin, which was formed by a slight structural downwarp in the otherwise relatively flat-lying sequence of basalt flows of the Columbia River Group. The basalt was laid down during Miocene time (26 million years before present) as widespread flows that were generated from numerous fissures located across southeastern Washington and southern Idaho. During the basalt extrusions, the Columbia and Snake Rivers periodically were pushed into new courses; evidence for ancient channels of these rivers is indicated by the presence of some river gravels interbedded with the basalt flows.

Several times during the Pleistocene "Ice Age", vast glaciers originating in Canada advanced into the northern part of the Columbia Plateau, northern Idaho, and Montana. Glacial meltwater streams from northern Washington, along with gigantic floods caused by sudden breakage of ice-damned lakes in the Selkirk and Rocky Mountains to the northeast of the Columbia Plateau (Glacial Lake Missoula) cut deep channels (coulees) across the Colombia Plateau. Occasionally, the water was partially impounded by both ice blocks and landslide debris in the lower Columbia River Valley, and by the restricted outlet from the Pasco Basin at Wallula Gap. Temporary large lakes formed in the vicinity of the study area, depositing silt and clay sediments within the river valleys. As the natural dams periodically broke, draining the lakes, the fine-grained lacustrine deposits were eroded by the flood waters. During the latter stages of the glacial period, thick accumulations of wind eroded fine-grained soil (loess) were deposited across the landscape of the plateau.

The geology of the subject site is characterized by these glaciofluvial and glaciolacustrine sediments deposited over basalt bedrock of the Columbia River Group. These sediments were originally deposited during the last major glacial advance which ended approximately 12,000 years ago. During this time, the thick intervals of flood sediments (chiefly cobbles, gravels, and sands) were deposited. After the glacial flood period ended, glacial deposits in the low lying areas of the drainage basin were reworked by local streams and rivers, chiefly the Columbia River at the subject site.

The soils located beneath the subject site consist of 7 to 8 feet of dry brown, fine sandy silt (Loess) over gravel with some cobbles in a sandy matrix. These gravelly soils were probably initially derived from the large floods which occurred approximately 12,000 years ago. Gravel at the site primarily

consists of rounded basalt fragments and are clast supported in places. Since initial deposition of the coarse material, the sediments have been reworked by the Columbia River; the river's present day coarse is located approximately 1/2 mile east of the subject site. Wind blown silt, (loess) was later deposited over the glaciofluvial deposits. The Columbia River is presently dammed by the McNary Dam, which forms Lake Wallula east of the site. Shallow groundwater beneath the site appears connected with the current lake water table and fluctuates seasonally with river and lake levels.

The Columbia River Basalt Group hosts the area's regional aquifer system. These basalt flows compose a multilayered aquifer system with major aquifers located within the basalt interbeds (which typically average 5 to 30 percent of the total flow thickness). General regional groundwater flow is to the south. Some aquifers are connected hydraulically through vertical fractures or columnar jointing within the thinner basalt flows. These deep aquifers are the predominant water source for most municipal, industrial, domestic, and agricultural needs. Locally, shallow perched aquifers may exist.

The shallow aquifer beneath the site occurs at a depth of approximately 8 feet below grade and appears to be part of the Lake Wallula water system. Drinking and industrial water for the City of Richland is primarily derived directly from the Columbia River. The City also maintains 18 deep wells (approximately 120 to 150 feet deep) which supply drinking water and placed in five separate well field locations around the city. These wells are founded within the unconsolidated sediments except for one well which is located south of Richland and is founded within a basalt interflow at a depth of approximately 1,200 feet. The closest well field to the subject site is the Wellsian Way well field located approximately 1,500 feet southwest of the subject site. This well field is currently not in use due to the presence of chlorinated solvents detected within the ground water.

QUANTITATIVE ANALYSIS

Analytical Test Results: Soil

A total of 12 soil samples were collected during the geo-probe assessment phase of the project. Soils were collected at the water interface, removed to the surface placed in laboratory prepared glass sample jars and placed within a chilled ice chest. Soils were then transported to North Creek Analytical Laboratory in Spokane, Washington for analytical testing of the volatile aromatics BTEX and purgeable hydrocarbons (gasoline). Chain-of-custody procedures were maintained throughout the handling of the samples.

During collection of soil samples, visual, olfactory or other indications of petroleum hydrocarbons were noted in soil samples collected in all explorations. Samples collected at and immediately above the groundwater interface (approximately 5 to 7 feet below grade) had minimal indications of hydrocarbon impacts.

No detectable concentrations of purgeable hydrocarbons as gasoline or the volatile aromatic hydrocarbons BTEX were identified in any soil samples submitted for analytical testing. Table 2 presents a summary of analytical testing of soils. Analytical test certificates are presented in Attachment B.

ANALYTICAL TEST RESULTS - GROUNDWATER

One groundwater sample was collected from each of the 12 temporary probe locations and one from each of the three existing site monitoring wells. After installation of each probe, the groundwater was allowed to recharge into the well screen and approximately 1/4 to ½ gallons of water was purged from the probe before the sample was collected. Each water sample was collected from the well by inserting dedicated polyethylene tubing into the water column. The tubing was then attached to a peristaltic pump, and a suction applied to withdraw the water into the tubing. Groundwater was then collected into two laboratory prepared VOA's from each sampling location, and then sealed with a Teflon cap allowing for no air bubbles to remain within the sample container. All groundwater samples collected were immediately transferred to a chilled ice chest and transported to North Creek Analytical laboratory under chain-of-custody procedures. All water samples were analyzed for:

- Purgeable petroleum hydrocarbons (gasoline) by Ecology Method WTPH-G; and
- Aromatic Hydrocarbons BTEX by EPA Method 8020.

Detectable levels of purgeable hydrocarbons as gasoline were found in groundwater samples collected from explorations P-3W, P-5W, P-11W and within the three existing site monitoring wells (MW-1, MW-2 and MW-3). Laboratory method detection limits were 50.0 ug/l (ppb). The highest concentration was 33,700 ppb exhibited in the sample collected from MW-3, located east of the former northern pump island. All three monitoring wells and probe exploration P-3W exhibited purgeable hydrocarbon concentrations above 10,000 ppb. These are: P-3W (13,600 ppb), MW-1 (14,400 ppb), MW-2 (17,400 ppb) and MW-3 (33,700 ppb). Two other groundwater samples had detectable results below the MTCA Method A cleanup level of 1000 ppb: P-5W (176 ppb) and P-11W (733 ppb).

Detectable concentrations of benzene were found in four probe and three monitoring well groundwater samples with all exceeding the MTCA Method A cleanup level of 5 ppb except P-8W. Laboratory detection limits were at 0.5 ppb. The highest concentration was 2,270 ppb found in sample P-3W located across Gillespie Avenue.

Detectable levels of toluene were found in groundwater samples collected from P-3W, P-11W, MW-1, MW-2, and MW-3 with only the sample from MW-3 exceeding the cleanup level of 40.0 ppb set forth in Method A of MTCA Laboratory detection limits were at 0.5 ppb. The highest concentration was 77.1 ppb collected from MW-3 located immediately east of the former northern pump island.

Detectable levels of ethylbenzene were found in groundwater samples collected from P-3W, P-11W, MW-1, MW-2, and MW-3. Laboratory detection limits were at 0.5 ppb. Three of the samples analyzed exhibited ethylbenzene concentrations above 30 ppb, the cleanup level set forth in Method A of MTCA. These three samples were collected from the three existing site monitoring wells. The highest concentration was 1,190 ppb collected from MW-3.

Detectable levels of xylene were found in groundwater samples collected from P-3W, P-11W, MW-1, MW-2 and MW-3. Laboratory detection limits were at 1.0 ppb. Three of the samples analyzed (from the three existing site monitoring wells) exhibited xylene concentrations above 20 ppb, the cleanup level set forth in MTCA. The highest concentration was 3,800 ppb collected from MW-3.

A summary of analytical test results groundwater is presented is presented in Table 3. Analytical test certificates are presented in Attachment A.

INTERPRETATION OF GROUNDWATER ANALYSES

The analytical data and chromatograms from the WTPHG/BTEX analysis of samples from this project have been reviewed to assess the nature of the petroleum hydrocarbons product present in the samples, and the relationship between the hydrocarbons in the different samples. Analysis of the data using star diagrams, logarithms of the gasoline to benzene ratios, and pattern recognition techniques suggests that the data may be divided into several groups of related samples.

Star diagrams are presented in Attachment B. The star diagrams of the ratios of BTEX components allow easy visual comparison of the relative age of gasoline in the samples. The closer the diagram is to a three-pointed star, the fresher the gasoline. The closer the diagram is to hexagonal, the older the apparent age. It should be noted that apparent age will increase as a gasoline degrades in the subsurface, becomes admixed with older releases and as the gasoline becomes more dilute as it travels away from a release point.

Review of the chromatograms helps to determine whether gasoline from more than one release is present. An experienced analytical chemist looked at the distribution of hydrocarbons in the sample and compared it with standard chromatograms of fresh and weathered gasoline. If the distribution includes evidence of lighter hydrocarbons and an exaggerated distribution of heavier hydrocarbons, the presence of gasoline from multiple releases is suggested.

MW-1, MW-2 and MW-3 are one of these clearly related groups. The three samples all contain a moderately weathered gasoline, and comparison of the peak patterns suggest that the gasoline in the samples is from the same source. The shape of the star diagrams, and the relative magnitudes of the gasoline to benzene ratios for the samples suggest that well MW-3 is closest to the release, and well MW-2 is furthest from the release, although the hydrocarbon in the two samples is very similar in nature. Interpretation of these samples may indicate that a release occurred from the pump island (located immediately west of MW-3) area of the former service station. In addition, a release or overfill may have occurred from the tank farm area (located immediately east of MW-2). These releases maybe related by either occurring generally at the same time interval but from the different areas of the fuel handling system, or, occurring from one source and being moved around beneath the site due to the groundwater gradient changing to the southwest during the time the Wellsian Way well field was in operation. Operation of the Wellsian Way well field ceased in April 1993.

The gasoline in P-3W, P-5W and P-11W is from a distinctly different release than that in MW-1, MW-2 , and MW-3 as evidenced by the star diagrams (Figure 5) and the gasoline to benzene ratios (Figure 6). The gasoline in sample P-5W and that in sample P-11W appear to be very closely related, and the data suggests that these samples contain a mixture of old and relatively fresh gasoline. In both samples, the appearance of the group of peaks in the chromatogram between 10 and 20 minutes detection time suggests the presence of hydrocarbons from an old, well-weathered gasoline. In addition, the samples contain very low or nonexistent concentrations of toluene, ethylbenzene and xylenes.

Both samples appear to be enriched with benzene relative to the other BTEX constituents, which suggests that gasoline from a newer release is moving into the area of the site covered by these sampling locations. The gasoline in sample P-3W is the freshest gasoline in any of these samples. Comparison of the overall chromatographic pattern for this sample suggests that the gasoline in P-3W may be the same gasoline that is moving into locations P-11W and P-5W. This release appears to have been generated off-site and may be migrating towards the subject property. Gasoline and Benzene concentrations are presented in Figure 4.

CONCLUSIONS

The soils located beneath the subject site consist of 7 to 8 feet of dry brown, fine sandy silts (Loess) over gravel with some cobbles in a sandy matrix. These gravelly soils were probably initially derived from the large floods which occurred approximately 12,000 years ago. Gravel at the site primarily consists of rounded basalt fragments and are clast supported in places. Since initial deposition of the coarse material, the sediments have been reworked by the Columbia River; the river's present day coarse is located approximately 1/2 mile east of the subject site. Wind blown silt, (loess) was later deposited over the glaciofluvial deposits. The Columbia River is presently dammed by the McNary Dam, which forms Lake Wallula east of the site. Shallow groundwater beneath the site appears connected with the current lake water table and fluctuates seasonally with river and lake levels.

Depth to groundwater measurements were collected by an AEE representative during our 12 August 1996 site visit. Based upon water level measurements collected during this site visit, the depth to shallow groundwater from the top of casing ranged from 6.40 (MW-2) to 7.89 feet (MW-3). Elevations, based on AEE's top of casing measurements and based on a relative datum, ranged from 86.68 (MW-3) to 86.91 feet (MW-2). An approximate shallow groundwater gradient of 0.0037 ft/ft (0.37 feet vertical fall in 100 feet horizontal) was calculated, with groundwater flow trending towards the northeast.

No soil samples collected exhibited any impact by petroleum hydrocarbons in the geo-probe explorations completed in the area of the subject site.

Two distinct hydrocarbon plumes were interpreted from the groundwater analyses. One of the plumes appears to be of a moderately weathered gasoline. This plume is located on-site and is defined by the monitoring wells. A separate plume appears to be of a mixed aged gasoline and a relative new release. This is identified in geo-probes P-3, P-5 and P-11. This plume appears to be migrating across Gillespie Street and Lee Boulevard. The edge of this plume appears to be migrating across the extreme northwest corner of the site. The plume located on the subject property does not have a definitive source location. Although all groundwater samples collected on-site appear to be impacted by the same aged gasoline, multiple sources from the former gasoline UST tank field and/or the pump islands may have been the point of origin for this plume.

CLOSURE

Information contained in this report is based upon site characterization, field observations, and laboratory analyses accomplished for this study. Conclusions presented are professional opinions based upon our interpretation of the analytical laboratory test results, as well as our experience and observations during the project field activities. The number, locations, and depth of explorations

during the pre-assessment characterization program, including the analytical testing scope, were completed within the site and proposal constraints so as to yield the information utilized to formulate our conclusions.

This letter has been prepared for the exclusive use of Chevron U.S.A. Products Company, and their agents, for specific application to the referenced scope of services for the subject site. All work and services have been performed in accordance with generally accepted environmental assessment practices. No other warranty, express or implied, is made. In the event that other information regarding site conditions becomes known (from subsequent phases of this project), or if there are changes to the conditions of the existing site or surrounding properties, the conclusions of this letter report should be reviewed, and if necessary, revised to reflect the updated information.

We appreciate the opportunity to be of continuing service to Chevron U.S.A. Products Company on this project. Should you have any questions regarding this letter or require further services at this site, please call us at your earliest convenience.

Respectfully submitted,
AGRA Earth & Environmental, Inc.

Eugene N. St.Godard, P.G.
Senior Project Geologist

for Jon N. Sondergaard, P.G.
Associate

Enclosures:

Table 1:	Summary of Fluid Level Measurements
Table 2:	Summary of Analytical Testing - Soils
Table 3:	Summary of Analytical Testing - Groundwater
Figure 1:	Location Map
Figure 2:	Site Plan
Figure 3:	Geoprobe Exploratory Locations
Figure 4:	Gasoline and Benzene Concentrations
Figure 5:	Star Diagrams
Figure 6:	Logarithm of Gasoline/Benzene Ratio
Attachment A:	Analytical Test Certificates
Attachment B:	Star Diagrams

6924-01422-0

RICHLAND CHEVRON

TABLE 1: SUMMARY OF FLUID LEVEL MEASUREMENTS

WELL NO.	DATE	CASING ELEVATION	DEPTH TO WATER (FT)	GROUNDWATER ELEVATION (FT)
MW-1	8/11/94	93.98	7.03	86.95
MW-1	8/25/94	93.98	7.00	86.98
MW-1	9/23/94	93.98	7.00	86.98
MW-1	8/12/96	93.98	7.29	86.69
MW-2	8/11/94	93.21	6.10	87.11
MW-2	8/25/94	93.21	6.11	87.10
MW-2	9/23/94	93.21	6.11	87.10
MW-2	8/12/96	93.21	6.40	86.91
MW-3	8/11/94	94.57	7.63	86.94
MW-3	8/25/94	94.57	7.59	86.98
MW-3	9/23/94	94.57	7.59	86.98
MW-3	8/12/96	94.57	7.89	86.68

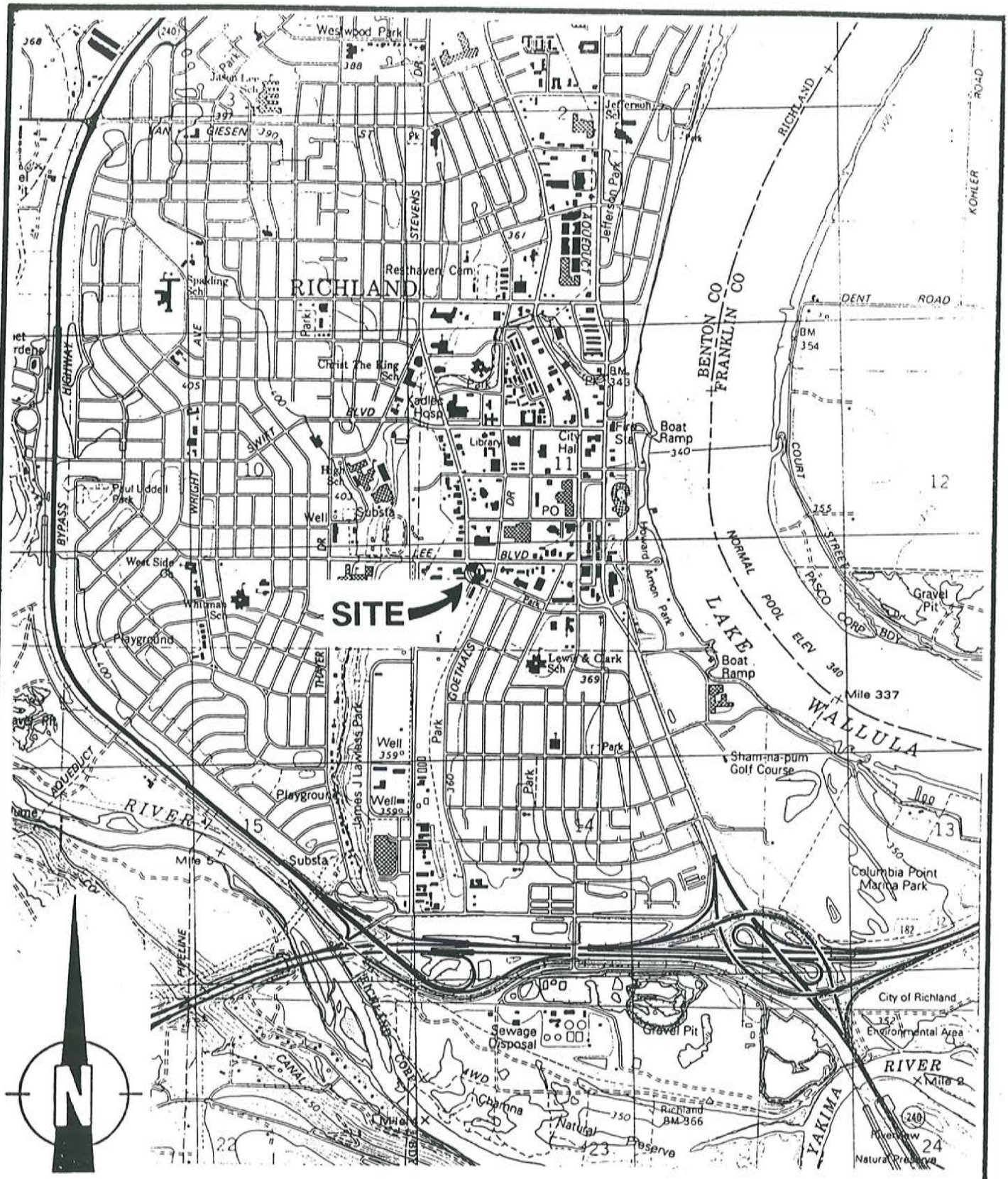
TABLE 2: SUMMARY OF ANALYTICAL TESTING - SOILS

Former Chevron Service Station No. 9-8944
1323 Lee Boulevard
Richland, Washington

Sample Number	Date Collected	Depth (feet)	TPH-G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)
P-1 S-1	8/12/96	6-8	ND	ND	ND	ND	ND
P-2 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-3 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-4 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-5 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-6 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-7 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-8 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-9 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-10 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-11 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
P-12 S-1	8/12/96	5-7	ND	ND	ND	ND	ND
Laboratory Method A Detection Limit			1.0	0.05	0.05	0.05	0.1
MTCA Method Cleanup Level			100	0.5	40.0	20.0	20.0

TABLE 3: SUMMARY OF ANALYTICAL TESTING - GROUNDWATER
GEOPROBE INVESTIGATION
Former Chevron Service Station No. 9-8944
1323 Lee Boulevard
Richland, Washington

Sample Number	Date Collected	TPH-G (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylene (ug/l)
P-1W	8/12/96	ND	ND	ND	ND	ND
P-2W	8/12/96	ND	ND	ND	ND	ND
P-3W	8/12/96	13600	2270	2.53	10.9	1.07
P-4W	8/12/96	ND	ND	ND	ND	ND
P-5W	8/12/96	176	7.23	ND	ND	ND
P-6W	8/12/96	ND	ND	ND	ND	ND
P-7W	8/12/96	ND	ND	ND	ND	ND
P-8W	8/12/96	ND	0.933	ND	ND	ND
P-9W	8/12/96	ND	ND	ND	ND	ND
P-10W	8/12/96	ND	ND	ND	ND	ND
P-11W	8/12/96	733	27.4	1.33	9.4	6.54
P-12W	8/12/96	ND	ND	ND	ND	ND
MW-1	8/12/96	14400	94.4	15.5	325	978
MW-2	8/12/96	17400	152	39.2	306	1120
MW-3	8/12/96	33700	84.6	77.1	1190	3800
Laboratory Method Detection Limit		50.0	0.5	0.5	0.5	1.0
MTCA Method A Cleanup Level		1000	5.0	40.0	30.0	20.0



RZA AGRA, INC.	
Engineering & Environmental Services	
Georgetown Office Building 539 West Sharp Suite D Spokane, WA 99201	

W.O.	S-1203-0
DESIGN	ENJS
DRAWN	ENJS
DATE	SEPT 1994
SCALE	1" = 2,000'

FIGURE 1

SITE VICINITY MAP

FORMER CHEVRON STATION NO. 9-8944
RICHLAND, WASHINGTON

GENDRON'S

Appendix A

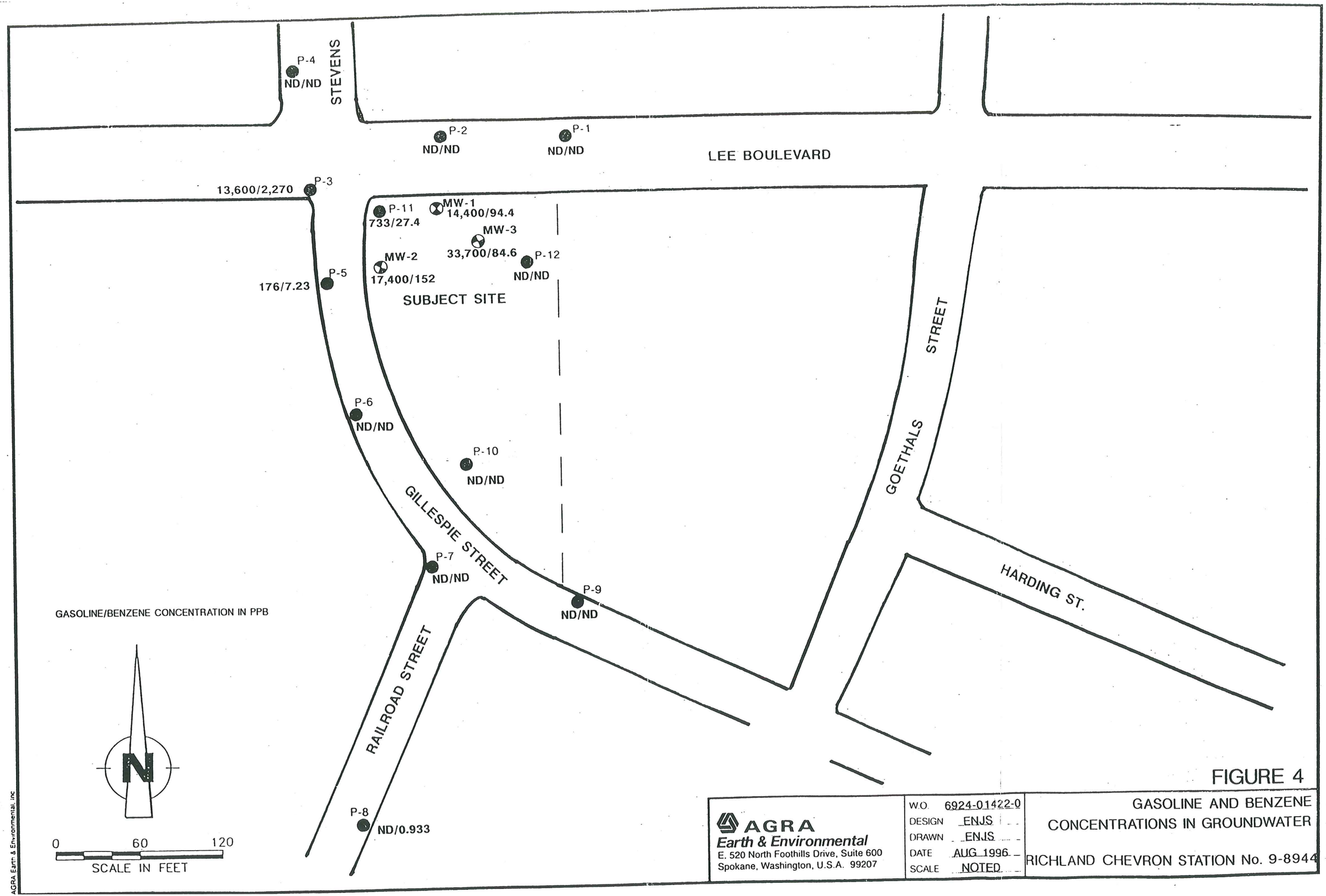


FIGURE 4

AGRA Earth & Environmental, Inc

AGRA
Earth & Environmental
E. 520 North Foothills Drive, Suite 600
Spokane, Washington, U.S.A. 99207

W.O.	6924-01422-0
DESIGN	ENJS
DRAWN	ENJS
DATE	AUG 1996
SCALE	NOTED

GASOLINE AND BENZENE CONCENTRATIONS IN GROUNDWATER

RICHLAND CHEVRON STATION No. 9-8944

LEE BLVD.

MW-3 94.57 / 86.68

(FORMER PUMP ISLAND)

(FORMER PUMP ISLAND)

FORMER SERVICE STATION

P-10

MW-1 93.98 / 86.69

APPROXIMATE PROPERTY BOUNDARY

SIDEWALK

FORMER TANK PIT

(FORMER PUMP ISLAND)

P-11

MW-2 93.21 / 86.91

GILLISPIE ST.

LEGEND

MW-1 — APPROXIMATE MONITORING WELL LOCATION AND NUMBER

93.88 / 86.98 — TOP OF CASING ELEVATION / GROUNDWATER ELEVATION AS MEASURED 8/25/94

INFERRED GROUNDWATER MIGRATION DIRECTION

N

0 10 20

SCALE IN FEET

AGRA Earth & Environmental, Inc.

AGRA
Earth & Environmental
E. 520 North Foothills Drive, Suite 600
Spokane, Washington, U.S.A. 99207

W.O.	6924-01422-0
DESIGN	ENJS
DRAWN	ENJS
DATE	AUG 1996
SCALE	NOTED

FIGURE 2

SITE PLAN

FORMER CHEVRON STATION NO. 9-8944

RICHLAND, WASHINGTON

FORMER SERVICE STATION

P-4

STEVENS

P-2

P-1

LEE BOULEVARD

P-3

P-11

MW-1

MW-3

MW-2

P-12

GAS STATION

P-5

SUBJECT SITE

EXXON SERVICE STATION

SERVICE STATION

STREET

P-6

GOETHALS

GROUNDWATER FLOW DIRECTION

P-10

GILLESPIE STREET

P-7

HARDING ST.

P-9

RAILROAD STREET

P-8

N

0 60 120

SCALE IN FEET

AGRA Earth & Environmental, Inc.

AGRA
Earth & Environmental
E. 520 North Foothills Drive, Suite 600
Spokane, Washington, U.S.A. 99207

W.O. 6924-01422-0
DESIGN ENJS
DRAWN ENJS
DATE AUG 1996
SCALE NOTED

FIGURE 3

GEO-PROBE EXPLORATORY LOCATIONS
RICHLAND CHEVRON STATION No. 9-8944

ATTACHMENT A
ANALYTICAL TEST CERTIFICATES

AGRA
Earth & Environmental

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX [illegible]992
SPOKANE ▪ (509) 924-9200 ▪ FAX [illegible]9290
PORTLAND ▪ (503) 643-9200 ▪ FAX [illegible]202

Agra - Spokane	Project: Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number: 6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager: Gene St. Godard	Reported: 8/21/96

Project Summary

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
P-1 S-1	S608040-01	Soil	8/12/96
P-2 S-1	S608040-02	Soil	8/12/96
P-3 S-1	S608040-03	Soil	8/12/96
P-4 S-1	S608040-04	Soil	8/12/96
P-5 S-1	S608040-05	Soil	8/12/96
P-6 S-1	S608040-06	Soil	8/12/96
P-7 S-1	S608040-07	Soil	8/12/96
P-8 S-1	S608040-08	Soil	8/12/96
P-9 S-1	S608040-09	Soil	8/12/96
P-10 S-1	S608040-10	Soil	8/12/96
P-11 S-1	S608040-11	Soil	8/12/96
P-12 S-1	S608040-12	Soil	8/12/96
P-1W	S608040-13	Water	8/12/96
P-2W	S608040-14	Water	8/12/96
P-3W	S608040-15	Water	8/12/96
P-4W	S608040-16	Water	8/12/96
P-5W	S608040-17	Water	8/12/96
P-6W	S608040-18	Water	8/12/96
P-7W	S608040-19	Water	8/12/96
P-8W	S608040-20	Water	8/12/96
P-9W	S608040-21	Water	8/12/96

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Project Summary

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
P-10W	S608040-22	Water	8/12/96
P-11W	S608040-23	Water	8/12/96
P-12W	S608040-24	Water	8/12/96
MW-1	S608040-25	Water	8/12/96
MW-2	S608040-26	Water	8/12/96
MW-3	S608040-27	Water	8/12/96

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-1 S-1			**S608040-01**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*105*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*83.6*	"	
P-2 S-1			**S608040-02**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*102*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*87.3*	"	
P-3 S-1			**S608040-03**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*109*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*89.4*	"	
P-4 S-1			**S608040-04**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*125*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*103*	"	
P-5 S-1			**S608040-05**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*113*	*%*	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-5 S-1 (continued)			**S608040-05**				**Soil, dry wt.**	
Surrogate: 4-BFB (PID)	*0860018*	*8/19/96*	*8/19/96*	*53.0-136*		*91.1*	*%*	
P-6 S-1			**S608040-06**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*116*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*95.8*	"	
P-7 S-1			**S608040-07**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*71.6*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*60.3*	"	
P-8 S-1			**S608040-08**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*103*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*86.2*	"	
P-9 S-1			**S608040-09**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*118*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*102*	"	
P-10 S-1			**S608040-10**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL • (206) 481-9200 • FAX 485-2992
SPOKANE • (509) 924-9200 • FAX 924-9290
PORTLAND • (503) 643-9200 • FAX 644-2202

.gra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-10 S-1 (continued)			**S608040-10**				**Soil, dry wt.**	
Ethylbenzene	0860018.	8/19/96	8/19/96		0.0500	ND	mg/kg (ppm)	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*121*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*103*	"	
P-11 S-1			**S608040-11**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*91.6*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*78.7*	"	
P-12 S-1			**S608040-12**				**Soil, dry wt.**	
Gasoline Range Hydrocarbons	0860018	8/19/96	8/19/96		1.00	ND	mg/kg (ppm)	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*105*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*53.0-136*		*90.3*	"	
P-1W			**S608040-13**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*123*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*96.0*	"	
P-2W			**S608040-14**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*72.4*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*97.6*	"	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX [illegible]
SPOKANE ▪ (509) 924-9200 ▪ FAX [illegible]
PORTLAND ▪ (503) 643-9200 ▪ FAX [illegible]

ıgra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-3W			**S608040-15**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		1670	**13600**	ug/l (ppb)	
Benzene	"	"	"		16.6	**2270**	"	
Toluene	"	"	"		0.500	**2.53**	"	
Ethylbenzene	"	"	"		0.500	**10.9**	"	
Xylenes (total)	"	"	"		1.00	**1.07**	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*113*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*88.8*	"	
P-4W			**S608040-16**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*120*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*94.8*	"	
P-5W			**S608040-17**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	**176**	ug/l (ppb)	
Benzene	"	"	"		0.500	**7.23**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*134*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*104*	"	
P-6W			**S608040-18**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*108*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*88.4*	"	
P-7W			**S608040-19**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*118*	*%*	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

ıgra - Spokane	Project: Chevron #9-8944	Sampled:	8/12/96
East 520 North Foothills #600	Project Number: 6924-01422-0	Received:	8/14/96
Spokane, WA 99207	Project Manager: Gene St. Godard	Reported:	8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-7W (continued)			**S608040-19**				**Water**	
Surrogate: 4-BFB (PID)	*0860023*	*8/20/96*	*8/20/96*	*56.0-142*		*96.0*	*%*	
P-8W			**S608040-20**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	**0.933**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*103*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*84.0*	"	
P-9W			**S608040-21**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*104*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*88.8*	"	
P-10W			**S608040-22**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*98.4*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*87.6*	"	
P-11W			**S608040-23**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	**733**	ug/l (ppb)	
Benzene	"	"	"		0.500	**27.4**	"	
Toluene	"	"	"		0.500	**1.33**	"	
Ethylbenzene	"	"	"		0.500	**9.40**	"	
Xylenes (total)	"	"	"		1.00	**6.54**	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*193*	*%*	*1*
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*111*	"	*1*
P-12W			**S608040-24**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		50.0	ND	ug/l (ppb)	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL • (206) 481-9200 • FAX 485-2992
SPOKANE • (509) 924-9200 • FAX 924-9290
PORTLAND • (503) 643-9200 • FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
P-12W (continued)			**S608040-24**				**Water**	
Ethylbenzene	0860023	8/20/96	8/20/96		0.500	ND	ug/l (ppb)	
Xylenes (total)	"	"	"		1.00	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*116*	*%*	
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*85.6*	"	
MW-1			**S608040-25**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		1000	**14400**	ug/l (ppb)	
Benzene	"	"	"		10.0	**94.4**	"	
Toluene	"	"	"		10.0	**15.5**	"	
Ethylbenzene	"	"	"		10.0	**325**	"	
Xylenes (total)	"	"	"		20.0	**978**	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*162*	*%*	*1*
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*108*	"	
MW-2			**S608040-26**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		1000	**17400**	ug/l (ppb)	
Benzene	"	"	"		10.0	**152**	"	
Toluene	"	"	"		10.0	**39.2**	"	
Ethylbenzene	"	"	"		10.0	**306**	"	
Xylenes (total)	"	"	"		20.0	**1120**	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*161*	*%*	*1*
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*114*	"	
MW-3			**S608040-27**				**Water**	
Gasoline Range Hydrocarbons	0860023	8/20/96	8/20/96		1000	**33700**	ug/l (ppb)	
Benzene	"	"	"		10.0	**84.6**	"	
Toluene	"	"	"		10.0	**77.1**	"	
Ethylbenzene	"	"	"		10.0	**1190**	"	
Xylenes (total)	"	"	"		20.0	**3800**	"	
Surrogate: 4-BFB (FID)	"	"	"	*50.0-150*		*155*	*%*	*1*
Surrogate: 4-BFB (PID)	"	"	"	*56.0-142*		*98.4*	"	

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ■ (206) 481-9200 ■ FAX 485-2992
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

,gra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Dry Weight Determination

Sample Name	Lab ID	Matrix	Result	Units
P-1 S-1	S608040-01	Soil	80.8	%
P-2 S-1	S608040-02	Soil	78.2	%
P-3 S-1	S608040-03	Soil	86.6	%
P-4 S-1	S608040-04	Soil	79.7	%
P-5 S-1	S608040-05	Soil	77.8	%
P-6 S-1	S608040-06	Soil	77.1	%
P-7 S-1	S608040-07	Soil	76.0	%
P-8 S-1	S608040-08	Soil	78.6	%
P-9 S-1	S608040-09	Soil	76.6	%
P-10 S-1	S608040-10	Soil	79.5	%
P-11 S-1	S608040-11	Soil	82.7	%
P-12 S-1	S608040-12	Soil	75.8	%

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A
Quality Control

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0860018	**Date Prepared: 8/19/96**									
Blank	**0860018-BLK1**				**Soil, dry wt.**					
Gasoline Range Hydrocarbons	8/19/96			**ND**	mg/kg (ppm)	**1.00**				
Benzene	"			**ND**	"	**0.0500**				
Toluene	"			**ND**	"	**0.0500**				
Ethylbenzene	"			**ND**	"	**0.0500**				
Xylenes (total)	"			**ND**	"	**0.100**				
Surrogate: 4-BFB (FID)	"	*1.48*		*1.65*	"	*50.0-150*	*111*			
Surrogate: 4-BFB (PID)	"	*1.48*		*1.39*	"	*53.0-136*	*93.9*			
Blank Spike	**0860018-BS1**				**Soil, dry wt.**					
Gasoline Range Hydrocarbons	8/19/96	10.0		12.3	mg/kg (ppm)	50.0-140	**123**			
Surrogate: 4-BFB (FID)	"	*1.48*		*1.67*	"	*50.0-150*	*113*			
Surrogate: 4-BFB (PID)	"	*1.48*		*1.42*	"	*53.0-136*	*95.9*			
Duplicate	**0860018-DUP1**		**S608036-01**		**Soil, dry wt.**					
Gasoline Range Hydrocarbons	8/19/96		ND	ND	mg/kg (ppm)			51.0		
Surrogate: 4-BFB (FID)	"	*1.73*		*2.19*	"	*50.0-150*	*127*			
Surrogate: 4-BFB (PID)	"	*1.73*		*1.90*	"	*53.0-136*	*110*			
Duplicate	**0860018-DUP2**		**S608040-01**		**Soil, dry wt.**					
Gasoline Range Hydrocarbons	8/19/96		2.48	ND	mg/kg (ppm)			51.0		
Surrogate: 4-BFB (FID)	"	*1.83*		*1.66*	"	*50.0-150*	*90.7*			
Surrogate: 4-BFB (PID)	"	*1.83*		*1.49*	"	*53.0-136*	*81.4*			
Matrix Spike	**0860018-MS1**		**S608036-01**		**Soil, dry wt.**					
Benzene	8/19/96	0.587	ND	0.711	mg/kg (ppm)	51.0-138	**121**			
Toluene	"	0.587	ND	0.687	"	47.0-147	**117**			
Ethylbenzene	"	0.587	ND	0.723	"	49.0-151	**123**			
Xylenes (total)	"	1.76	ND	2.27	"	50.0-145	**129**			
Surrogate: 4-BFB (FID)	"	*1.73*		*1.13*	"	*50.0-150*	*65.3*			
Surrogate: 4-BFB (PID)	"	*1.73*		*1.01*	"	*53.0-136*	*58.4*			
Matrix Spike Dup	**0860018-MSD1**		**S608036-01**		**Soil, dry wt.**					
Benzene	8/19/96	0.587	ND	0.677	mg/kg (ppm)	51.0-138	**115**	11.0	**5.08**	
Toluene	"	0.587	ND	0.676	"	47.0-147	**115**	14.0	**1.72**	
Ethylbenzene	"	0.587	ND	0.717	"	49.0-151	**122**	14.0	**0.816**	
Xylenes (total)	"	1.76	ND	2.21	"	50.0-145	**126**	15.0	**2.35**	
Surrogate: 4-BFB (FID)	"	*1.73*		*1.10*	"	*50.0-150*	*63.6*			
Surrogate: 4-BFB (PID)	"	*1.73*		*0.993*	"	*53.0-136*	*57.4*			

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX [illegible]
SPOKANE ▪ (509) 924-9200 ▪ FAX [illegible]
PORTLAND ▪ (503) 643-9200 ▪ FAX [illegible]

gra - Spokane	Project: Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number: 6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager: Gene St. Godard	Reported: 8/21/96

Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A
Quality Control

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0860023	**Date Prepared: 8/20/96**									
Blank	**0860023-BLK1**				**Water**					
Gasoline Range Hydrocarbons	8/20/96			**ND**	ug/l (ppb)	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**1.00**				
Surrogate: 4-BFB (FID)	"	*25.0*		*26.1*	"	*50.0-150*	*104*			
Surrogate: 4-BFB (PID)	"	*25.0*		*20.9*	"	*56.0-142*	*83.6*			
Blank Spike	**0860023-BS1**				**Water**					
Gasoline Range Hydrocarbons	8/20/96	1000		1300	ug/l (ppb)	71.0-145	**130**			
Surrogate: 4-BFB (FID)	"	*25.0*		*45.7*	"	*50.0-150*	*183*			1
Surrogate: 4-BFB (PID)	"	*25.0*		*32.7*	"	*56.0-142*	*131*			
Duplicate	**0860023-DUP1**		**S608040-13**		**Water**					
Gasoline Range Hydrocarbons	8/20/96		ND	ND	ug/l (ppb)			60.0		
Surrogate: 4-BFB (FID)	"	*25.0*		*25.4*	"	*50.0-150*	*102*			
Surrogate: 4-BFB (PID)	"	*25.0*		*22.8*	"	*56.0-142*	*91.2*			
Duplicate	**0860023-DUP2**		**S608040-22**		**Water**					
Gasoline Range Hydrocarbons	8/20/96		ND	ND	ug/l (ppb)			60.0		
Surrogate: 4-BFB (FID)	"	*25.0*		*24.2*	"	*50.0-150*	*96.8*			
Surrogate: 4-BFB (PID)	"	*25.0*		*20.3*	"	*56.0-142*	*81.2*			
Matrix Spike	**0860023-MS1**		**S608040-13**		**Water**					
Benzene	8/20/96	10.0	ND	8.24	ug/l (ppb)	54.0-143	**82.4**			
Toluene	"	10.0	ND	8.66	"	48.0-145	**86.6**			
Ethylbenzene	"	10.0	ND	10.3	"	49.0-142	**103**			
Xylenes (total)	"	30.0	ND	31.6	"	55.0-140	**105**			
Surrogate: 4-BFB (FID)	"	*25.0*		*28.9*	"	*50.0-150*	*116*			
Surrogate: 4-BFB (PID)	"	*25.0*		*23.9*	"	*56.0-142*	*95.6*			
Matrix Spike Dup	**0860023-MSD1**		**S608040-13**		**Water**					
Benzene	8/20/96	10.0	ND	8.02	ug/l (ppb)	54.0-143	**80.2**	23.0	**2.71**	
Toluene	"	10.0	ND	8.56	"	48.0-145	**85.6**	20.0	**1.16**	
Ethylbenzene	"	10.0	ND	10.3	"	49.0-142	**103**	24.0	**0**	
Xylenes (total)	"	30.0	ND	31.0	"	55.0-140	**103**	27.0	**1.92**	
Surrogate: 4-BFB (FID)	"	*25.0*		*28.5*	"	*50.0-150*	*114*			
Surrogate: 4-BFB (PID)	"	*25.0*		*24.1*	"	*56.0-142*	*96.4*			

North Creek Analytical, Inc.

Bob Bauer, Laboratory Supervisor

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (206) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Agra - Spokane	Project:	Chevron #9-8944	Sampled: 8/12/96
East 520 North Foothills #600	Project Number:	6924-01422-0	Received: 8/14/96
Spokane, WA 99207	Project Manager:	Gene St. Godard	Reported: 8/21/96

Notes

#	Note
1	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT

CHEVRON INFORMATION

CHEVRON Facility #: 9-8941
Facility Address: 1323 LEE Blvd
City, State, ZIP: RICHLAND WA
CHEVRON Contact Name: Rene White
CHEVRON Telephone #: 510 - 842 - 9581
Laboratory Release #:

CONSULTANT INFORMATION

Name: AGRA EARTH & ENV. Consultant Project #: 6924-01422-0
Address: E. 520 No. FOOTHILLS DR. STE 600
SPOKANE, WA 99207
Phone: 482-0104 Fax: 482-0202
Project Manager: E. St Goddard Consultant Project #:
Sample Collection by: E. St Goddard Airbill #:

Turnaround Times

Standard Analyses (DAYS): 10
RUSH Analyses (HOURS): 24 48
RUSH Analyses (DAYS): X

O Oregon O Washington O Alaska O Other - Hydrocarbon Methods

SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O,A)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX (EPA 8020 Mod.)	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-418.1	Halogen. Volatiles (EPA 8010)	Aromatic Volatiles (EPA 8020)	Pesticides/PCBs or PCBs Only	GC/MS Volatiles (EPA 8240/8260)	GC/MS Semi Vols (EPA 8270)	PAHs by HPLC (EPA 8310)	Lead: Total or Dissolved	TCLP Metals (8)	NCA Sample Number	REMARKS
1. P-1 S-1	8/12/96 0815	S	1				X												S608040-01	
2. P-2 S-1	0900	S	1				X												02	
3. P-3 S-1	0940	S	1				X												03	
4. P-4 S-1	10:20	S	1				X												04	
5. P-5 S-1	10:55	S	1				X												05	
6. P-6 S-1	12:15	S	1				X												06	
7. P-7 S-1	12:45	S	1				X												07	
8. P-8 S-1	13:20	S	1				X												08	
9. P-9 S-1	14:15	S	1				X												09	
10. P-10 S-1	14:40	S	1				X												10	

Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1. [signature]	AGRA	8/14/96 1540	[signature]	NCA	8/14/96 1540
2.					
3.					

REPORTS: Level 1 [ ] Level 2 [ ]
SAMPLE PRESERVATION (Iced): Yes / No
Fax Copy of Lab Report & COC to CHEVRON: Yes

103

Distribution: White - Laboratory Yellow - Consultant Photocopy - CHEVRON

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT

CHEVRON INFORMATION

CHEVRON Facility #: 9-8944
Facility Address: 1323 LEE Blvd
City, State, ZIP: RICHLAND WA
CHEVRON Contact Name: Rene White
CHEVRON Telephone #:
Laboratory Release #:

CONSULTANT INFORMATION

Name: AGRA
Consultant Project #: 6924-01422-0
Address: E 520 No. Foothills SPOKANE WA
Phone:
Fax:
Project Manager: E. St. Godard
Consultant Project #:
Sample Collection by:
Airbill #:

Turnaround Times

Standard Analyses (DAYS): 10
RUSH Analyses (HOURS): 24 48
RUSH Analyses (DAYS): X

O Oregon O Washington O Alaska O Other - Hydrocarbon Methods

	SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O,A)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX (EPA 8020 Mod.)	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-418.1	Halogen. Volatiles (EPA 8010)	Aromatic Volatiles (EPA 8020)	Pesticides/PCBs or PCBs Only	GC/MS Volatiles (EPA 8240/8260)	GC/MS SemiVols. (EPA 8270)	PAHs by HPLC (EPA 8310)	Lead: Total or Dissolved	TCLP Metals (8)	NCA Sample Number	REMARKS
1.	P-11 S-1	8/12/96 1520	S	1				X												-11	
2.	P-12 S-1	1605	S	1				X												-12	
3.	P-1W	0840	W	2				X												-13	
4.	P-2W	0905	W	2				X												-14	
5.	P-3W	0955	W	2				X												-15	
6.	P-4W	10:30	W	2				X												-16	
7.	P-5W	11:05	W	2				X												-17	
8.	P-6W	12:25	W	2				X												-18	
9.	P-7W	12:55	W	2				X												-19	
10.	P-8W	13:30	W	2				X												-20	

	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	[signature]	AGRA	8/14/96 1540	Camille Kern	NCA-S	8/14/96 1540
2.						
3.						

REPORTS: Level 1 ☐ Level 2 ☐

SAMPLE PRESERVATION (Iced) Yes No

Fax Copy of Lab Report & COC to CHEVRON: Yes No

v. 1.0

Distribution: White - Laboratory Yellow - Consultant Photocopy - CHEVRON

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHEVRON U.S.A., Inc. CHAIN OF CUSTODY REPORT

CHEVRON INFORMATION

CHEVRON Facility #: 9-8944
Facility Address: 1323 LEE Blvd.
City, State, ZIP: ~~Spokane~~ RICHLAND WA 99
CHEVRON Contact Name: Rene White
CHEVRON Telephone #:
Laboratory Release #:

CONSULTANT INFORMATION

Name: AGRA EARTH & ENV. Consultant Project #: 6924-01422-0
Address: E. 520 Nu Foothills #600 Spokane, WA
Phone: Fax:
Project Manager: E. St. Godard Consultant Project #:
Sample Collection by: Airbill #:

Turnaround Times

Standard Analyses (DAYS): 10
RUSH Analyses (HOURS): 24 48
RUSH Analyses (DAYS): 5 (checked)

O Oregon O Washington O Alaska O Other - Hydrocarbon Methods

	SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	MATRIX (W,S,O,A)	# OF CONTAINERS	TPH-HCID	TPH-Gas	BTEX (EPA 8020 Mod.)	TPH-Gas + BTEX	TPH-Diesel	TPH-Diesel Extended	TPH-418.1	Halogen. Volatiles (EPA 8010)	Aromatic Volatiles (EPA 8020)	Pesticides/PCBs or PCBs Only	GC/MS Volatiles (EPA 8240/8260)	GC/MS SemiVols. (EPA 8270)	PAHs by HPLC (EPA 8310)	Lead: Total or Dissolved	TCLP Metals (8)	NCA Sample Number	REMARKS
1.	P-9W	8/12/96 1420	W					X												-21	
2.	P-10W	1445	W					X												-22	
3.	P-11W	1530	W					X												-23	
4.	P-12W	1615	W					X												-24	
5.	MW-1	1500	W					X												-25	
6.	MW-2	1540	W					X												-26	
7.	MW-3	1600	W					X												-27	
8.																					
9.																					
10.																					

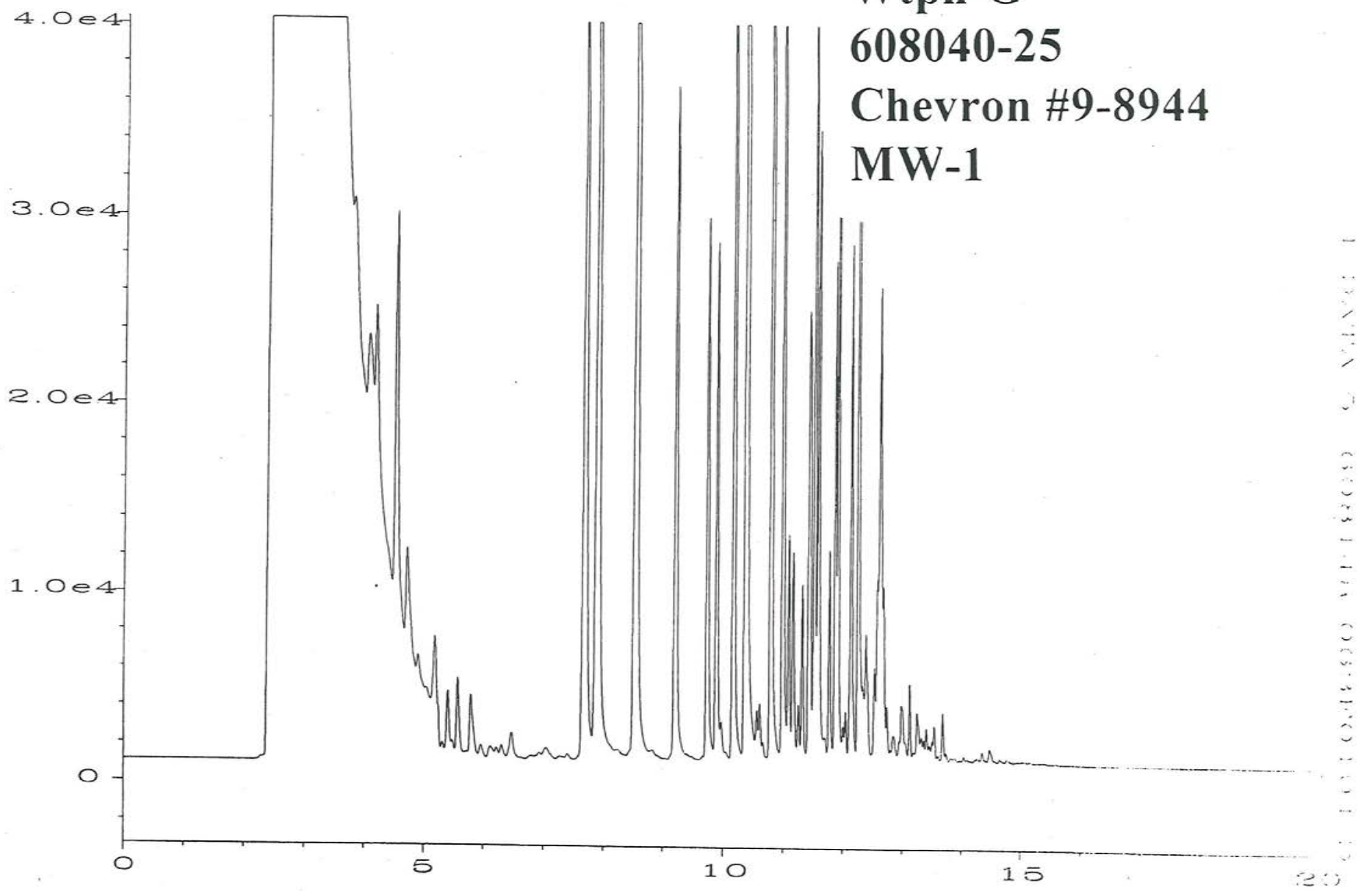
	Relinquished by:	Firm:	Date & Time	Received by:	Firm:	Date & Time
1.	Jim M St John	AGRA	8/14/96 1540	Camilla Kane	NCAS	8/14/96 15:40
2.						
3.						

REPORTS: Level 1 ☐ Level 2 ☐

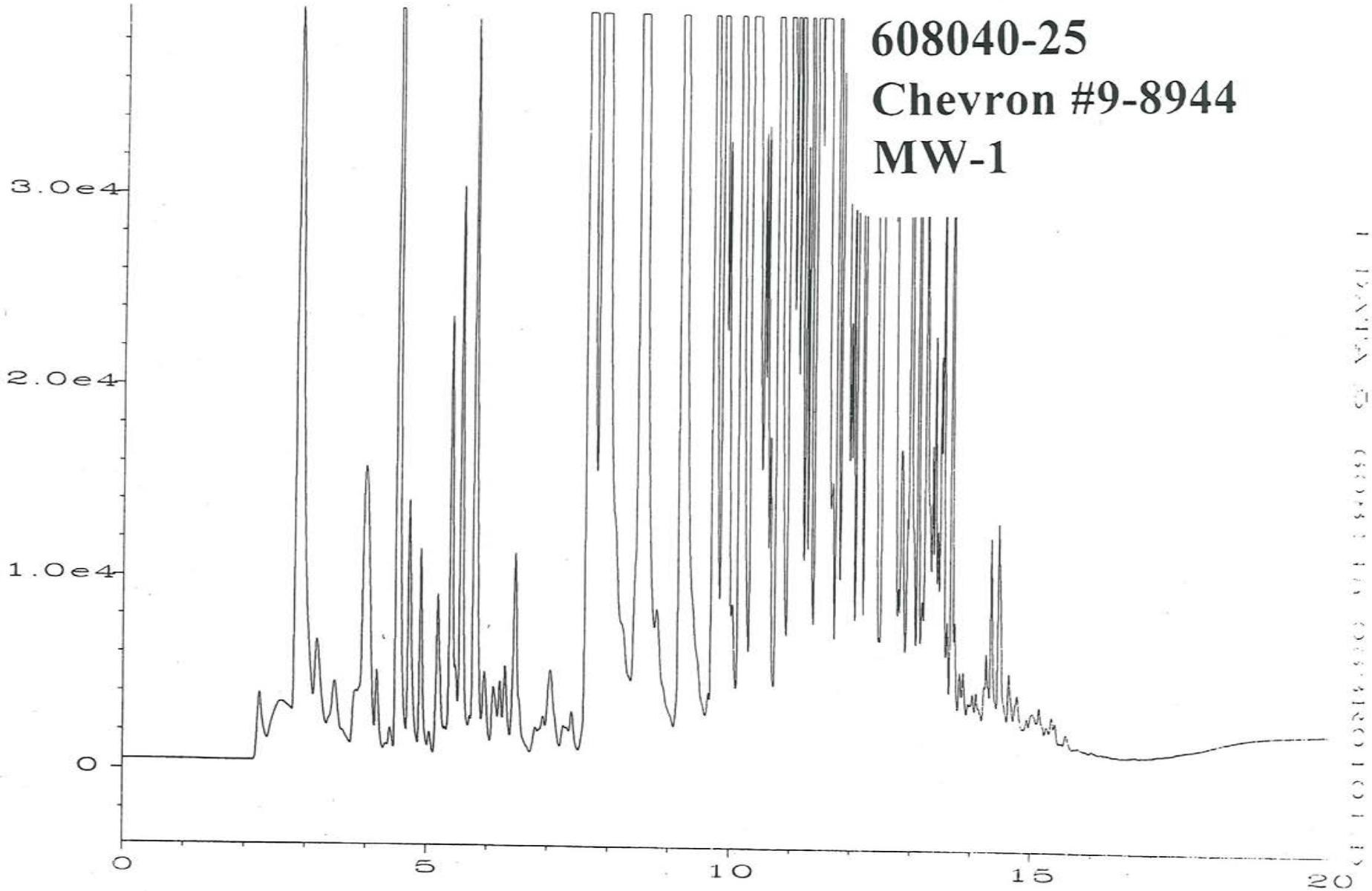
SAMPLE PRESERVATION (Iced) Yes No

Fax Copy of Lab Report & COC to CHEVRON: Yes

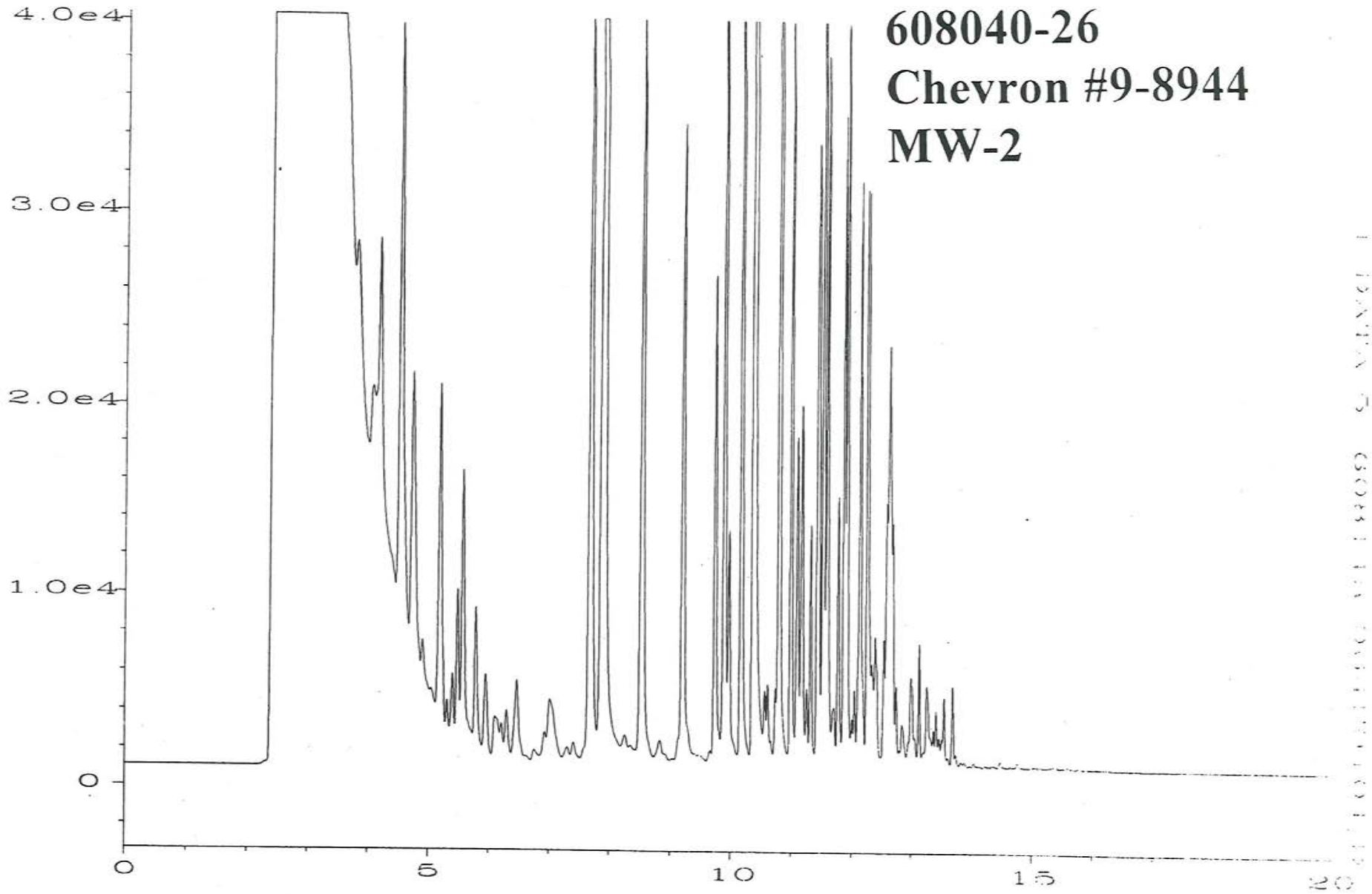
Distribution: White - Laboratory Yellow - Consultant Photocopy - CHEVRON


Wtph-G
608040-25
Chevron #9-8944
MW-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

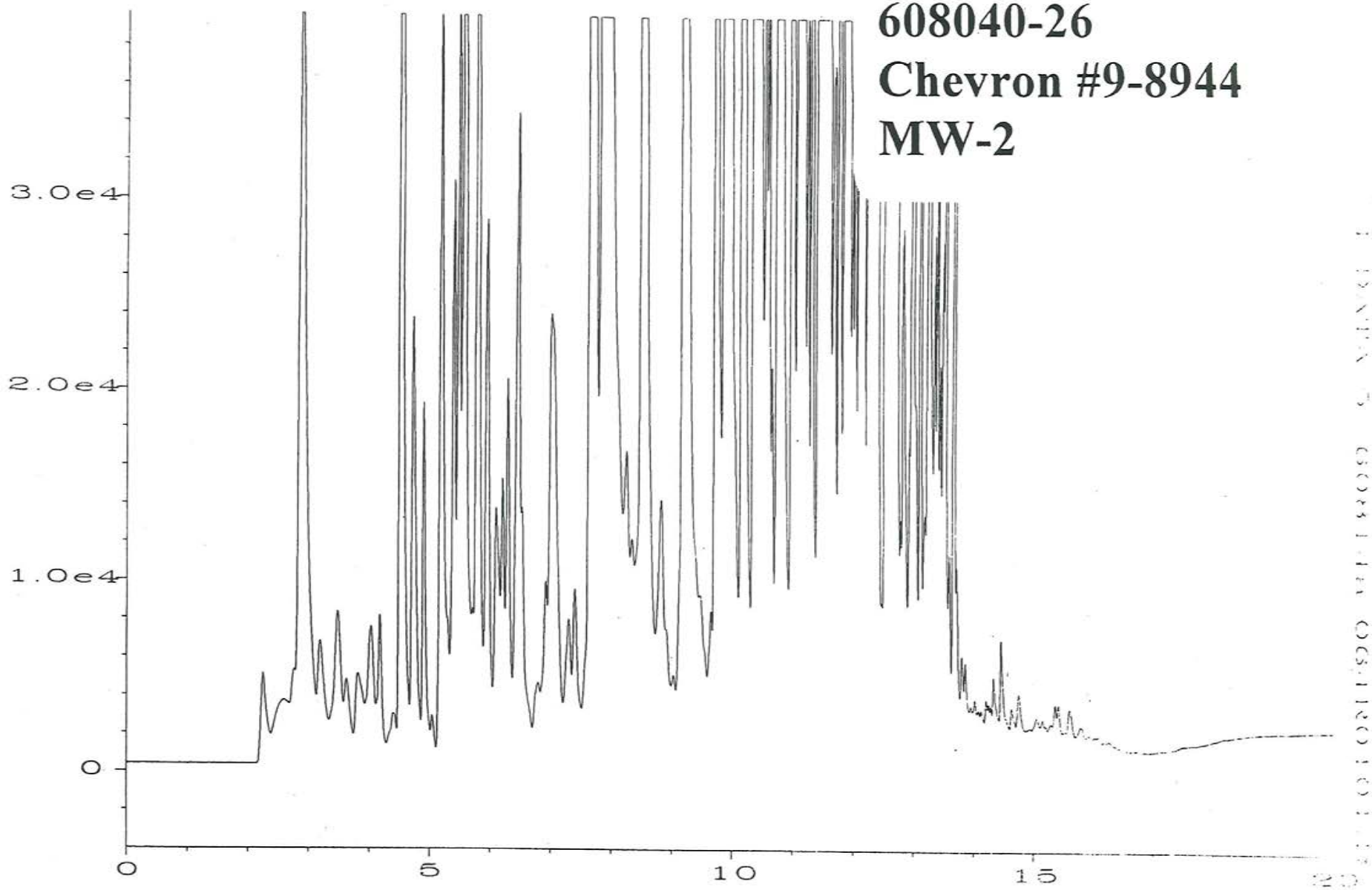
BTEX
608040-25
Chevron #9-8944
MW-1

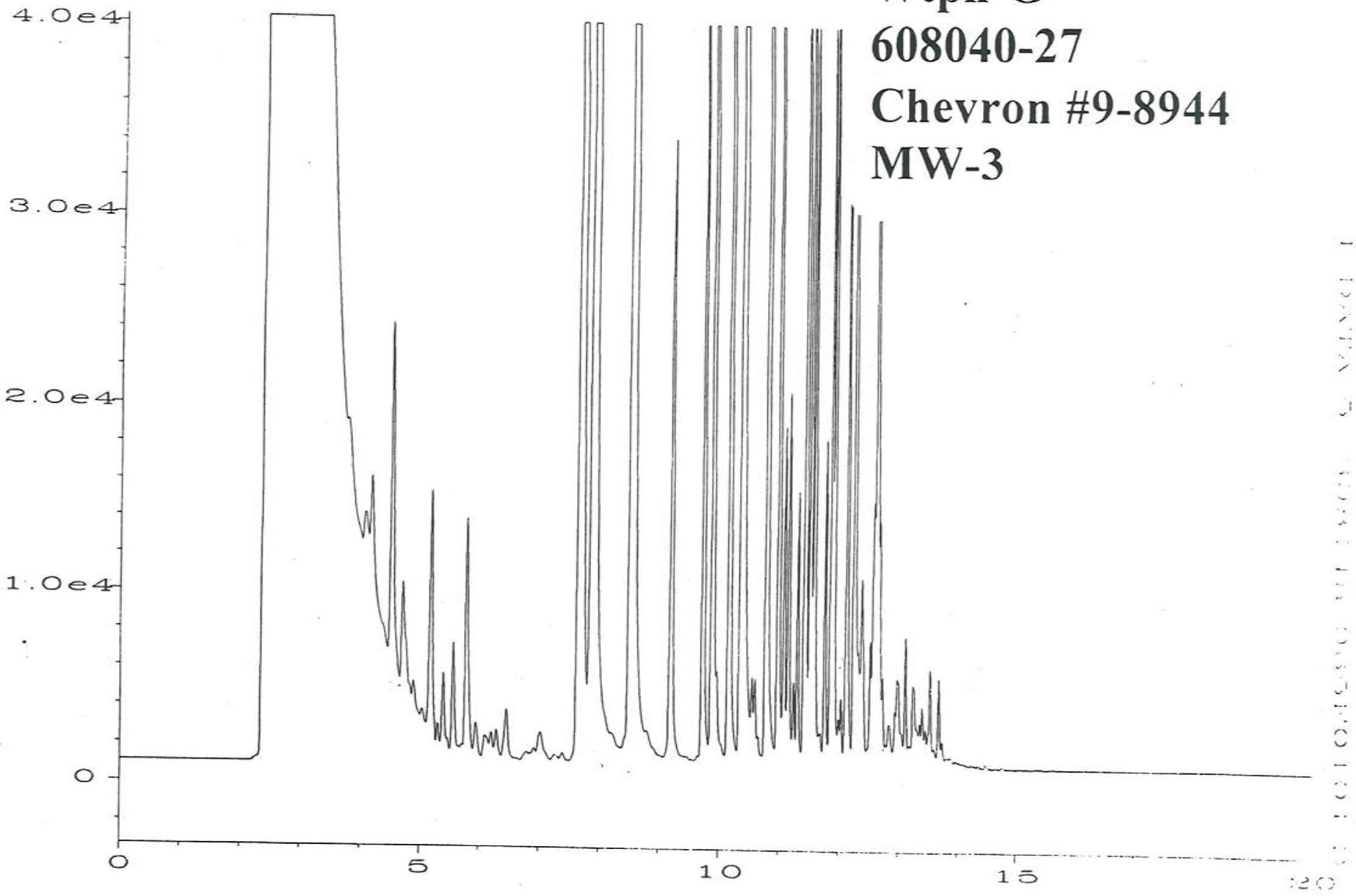


Wtph-G
608040-26
Chevron #9-8944
MW-2

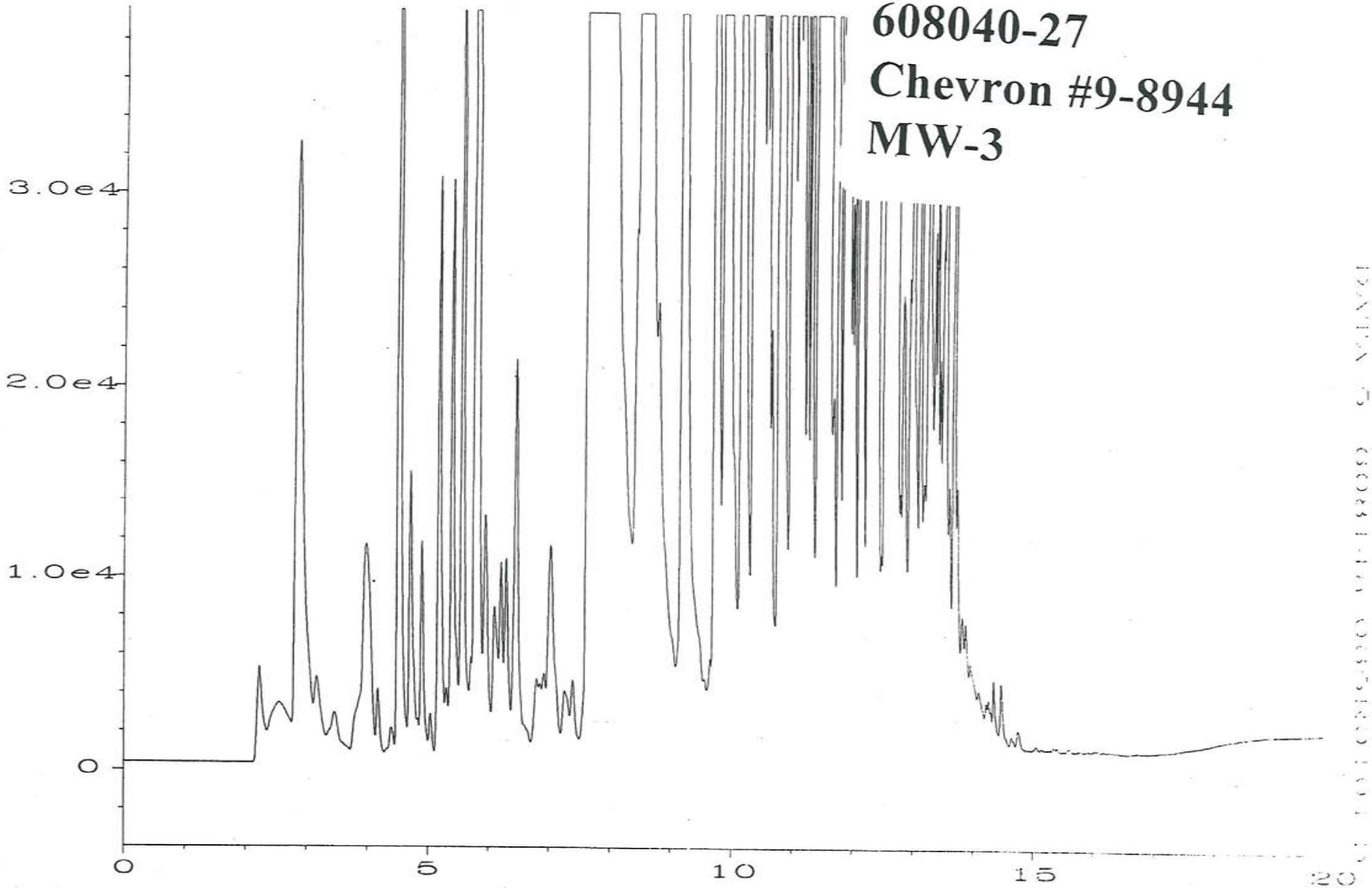


BTEX
608040-26
Chevron #9-8944
MW-2




Wtph-G
608040-27
Chevron #9-8944
MW-3
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

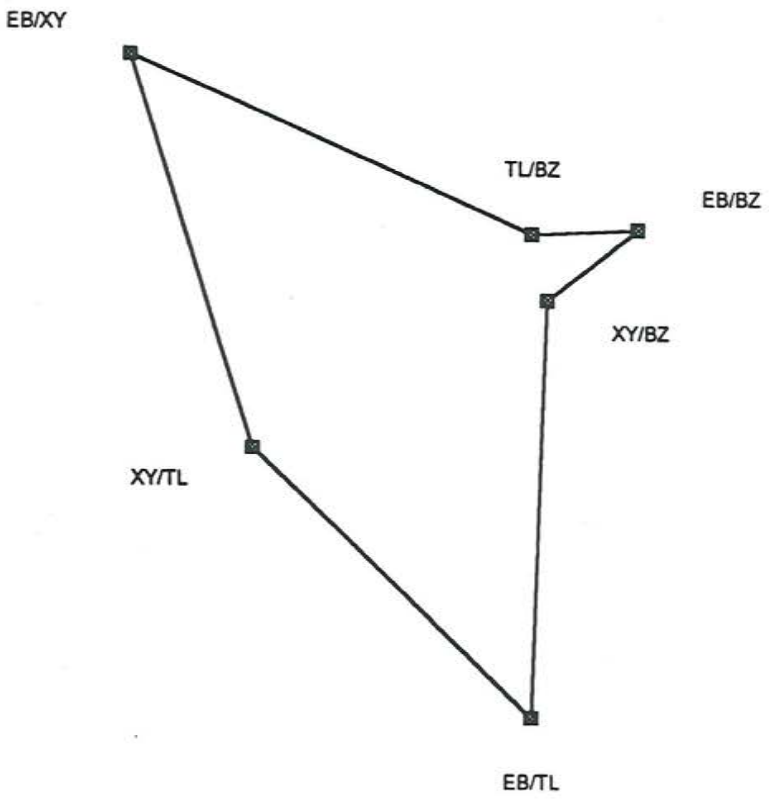
BTEX
608040-27
Chevron #9-8944
MW-3



ATTACHMENT B
STAR DIAGRAMS

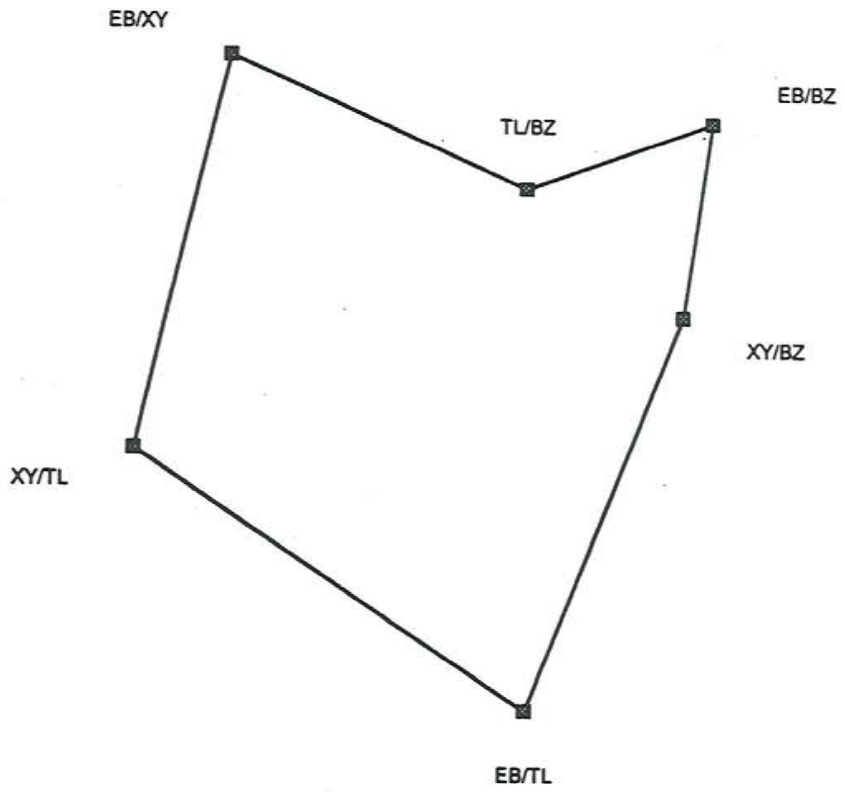
AGRA
Earth & Environmental

P-3W



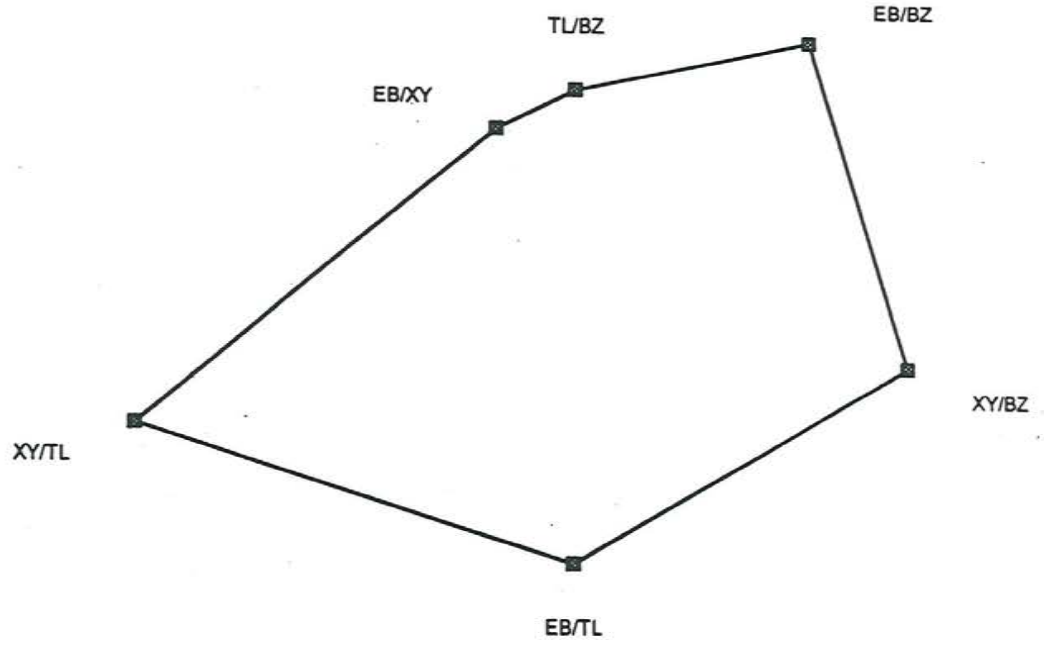
69241422 Chart 4

P-11W



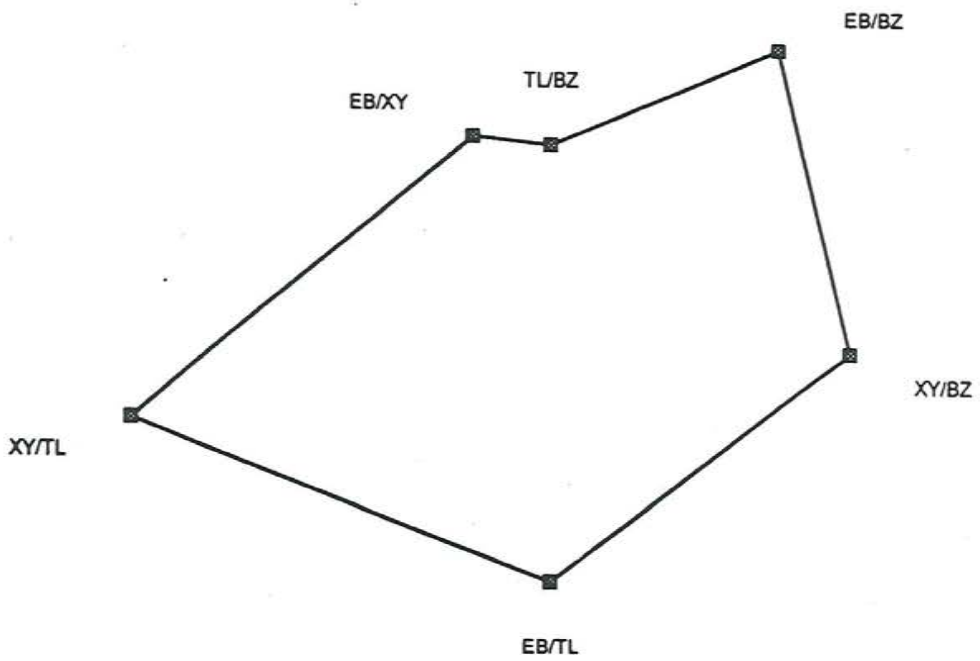
69241422 Chart 5

MW-2



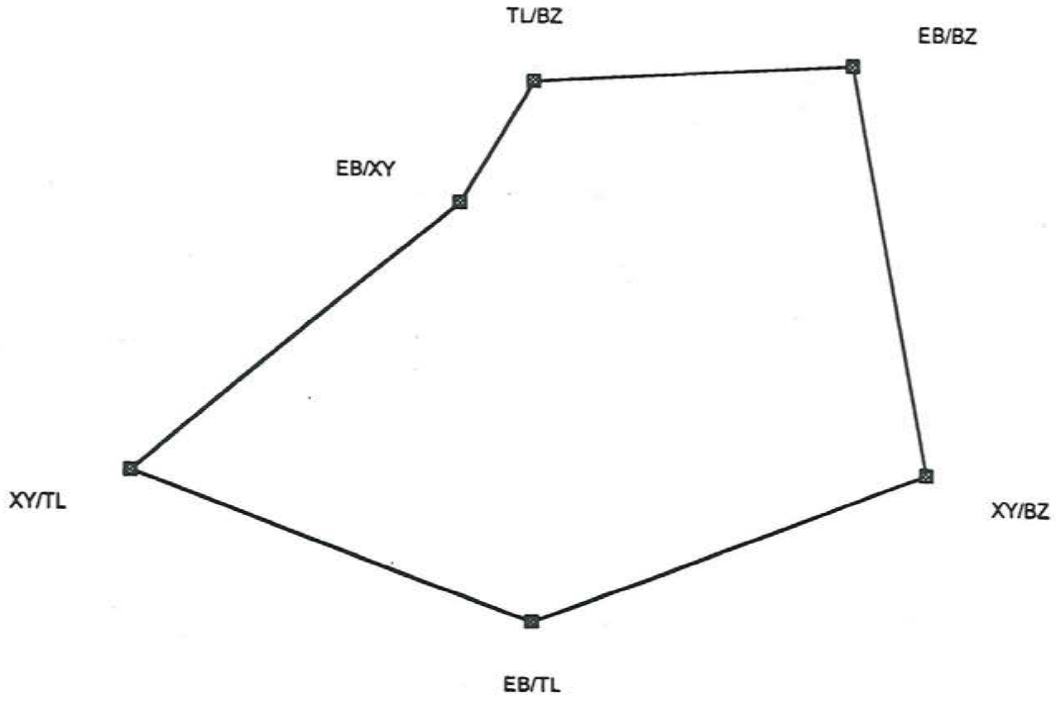
69241422 Chart 6

MW-1

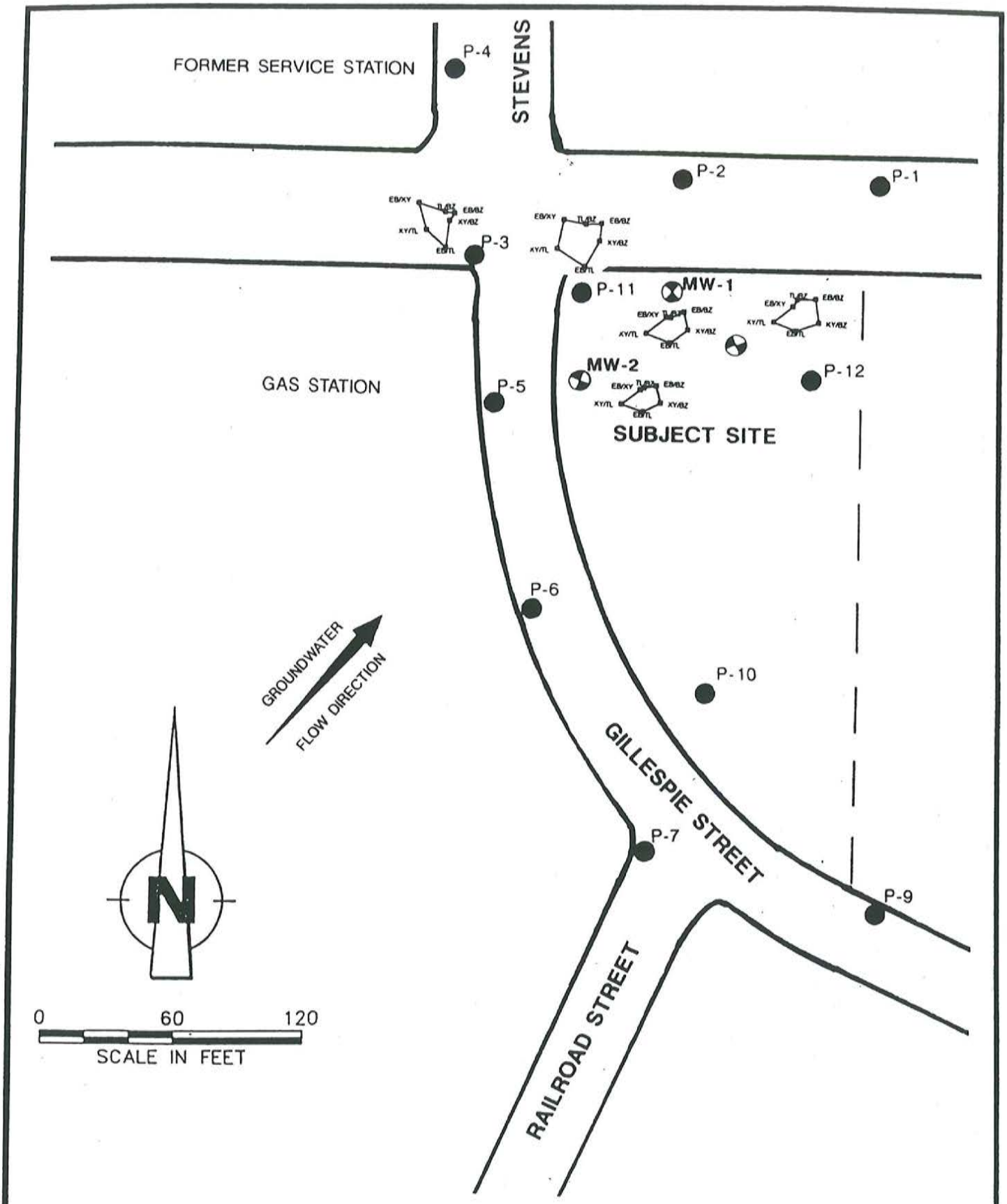


69241422 Chart 7

MW-3



Sample	TL/BZ	EB/BZ	XY/BZ	EB/TL	XY/TL	EB/XY
P-3W	-2.95291	-2.3186	-3.32664	0.634306	-0.37374	1.008043
P-11W	-1.3139	-0.46462	-0.62217	0.849276	0.691726	0.15755
MW-1	-0.78464	0.536911	1.015367	1.321552	1.800007	-0.47846
MW-2	-0.58856	0.303878	0.867374	0.892435	1.455932	-0.5635
MW-3	-0.04032	1.148177	1.652413	1.188493	1.692729	-0.50424



AGRA Earth & Environmental, Inc.

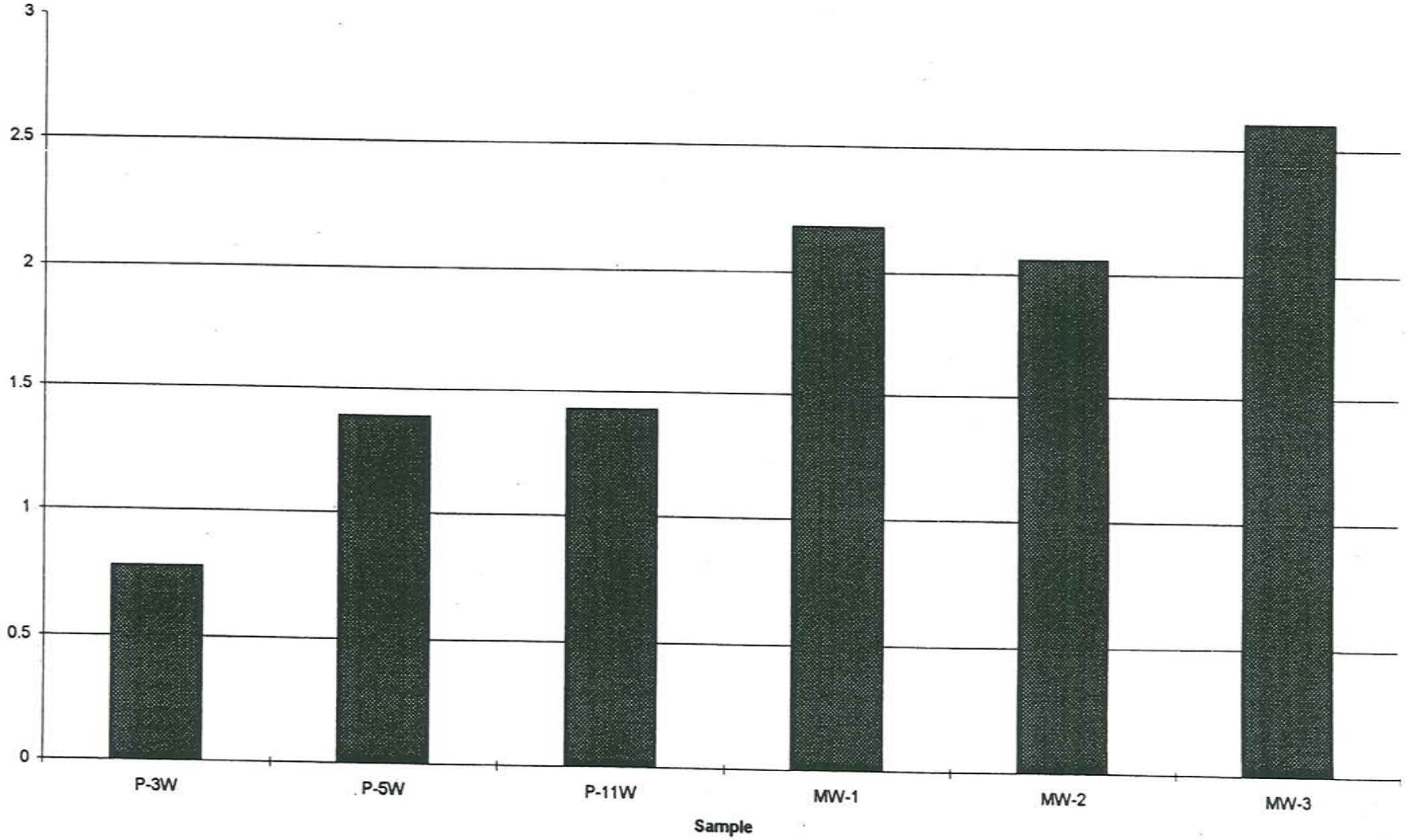
AGRA
Earth & Environmental
E. 520 North Foothills Drive, Suite 600
Spokane, Washington, U.S.A. 99207

W.O. 6914-01422-0
DESIGN
DRAWN
DATE
SCALE

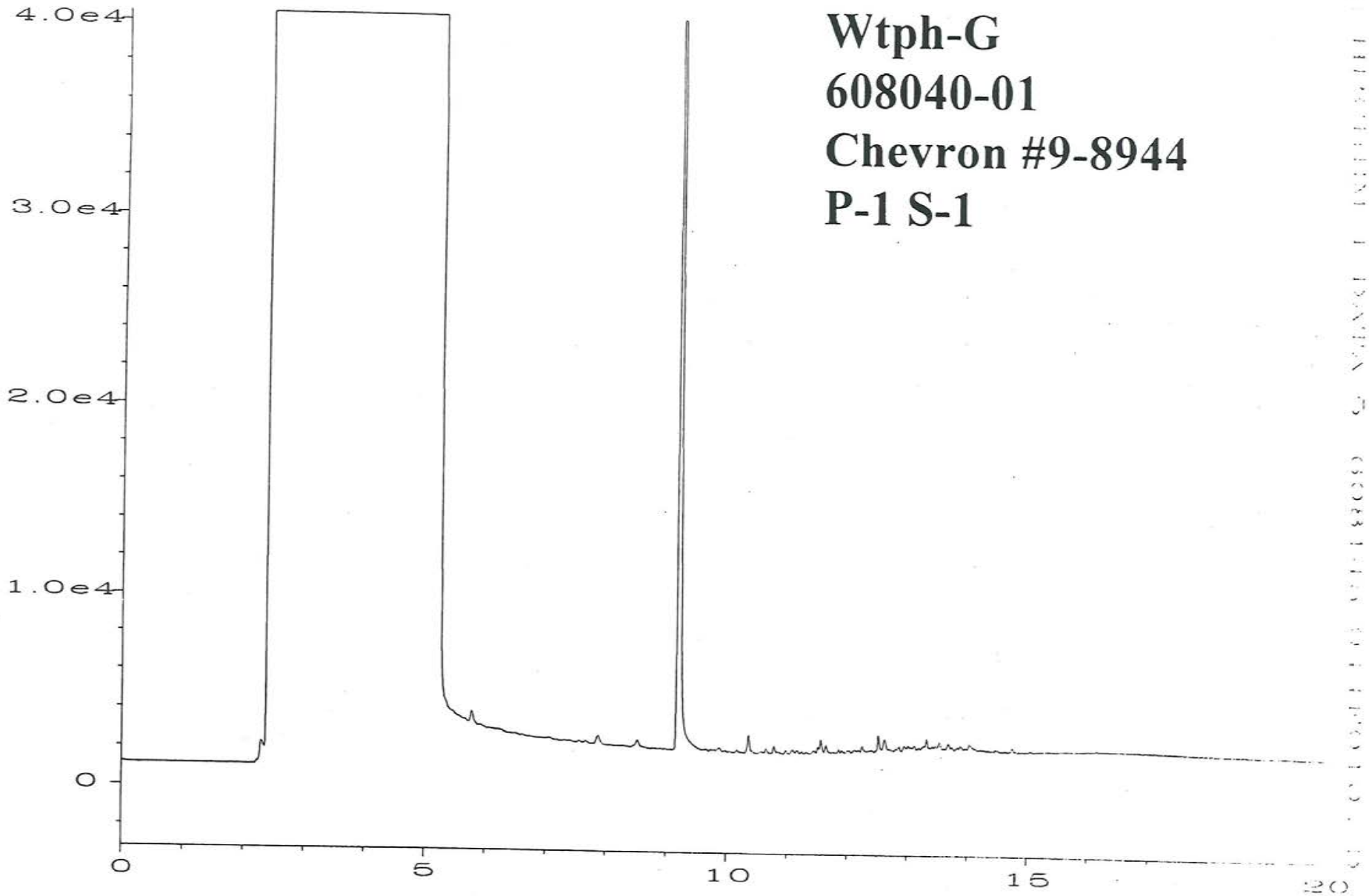
FIGURE 5
STAR DIAGRAMS

FIGURE 6

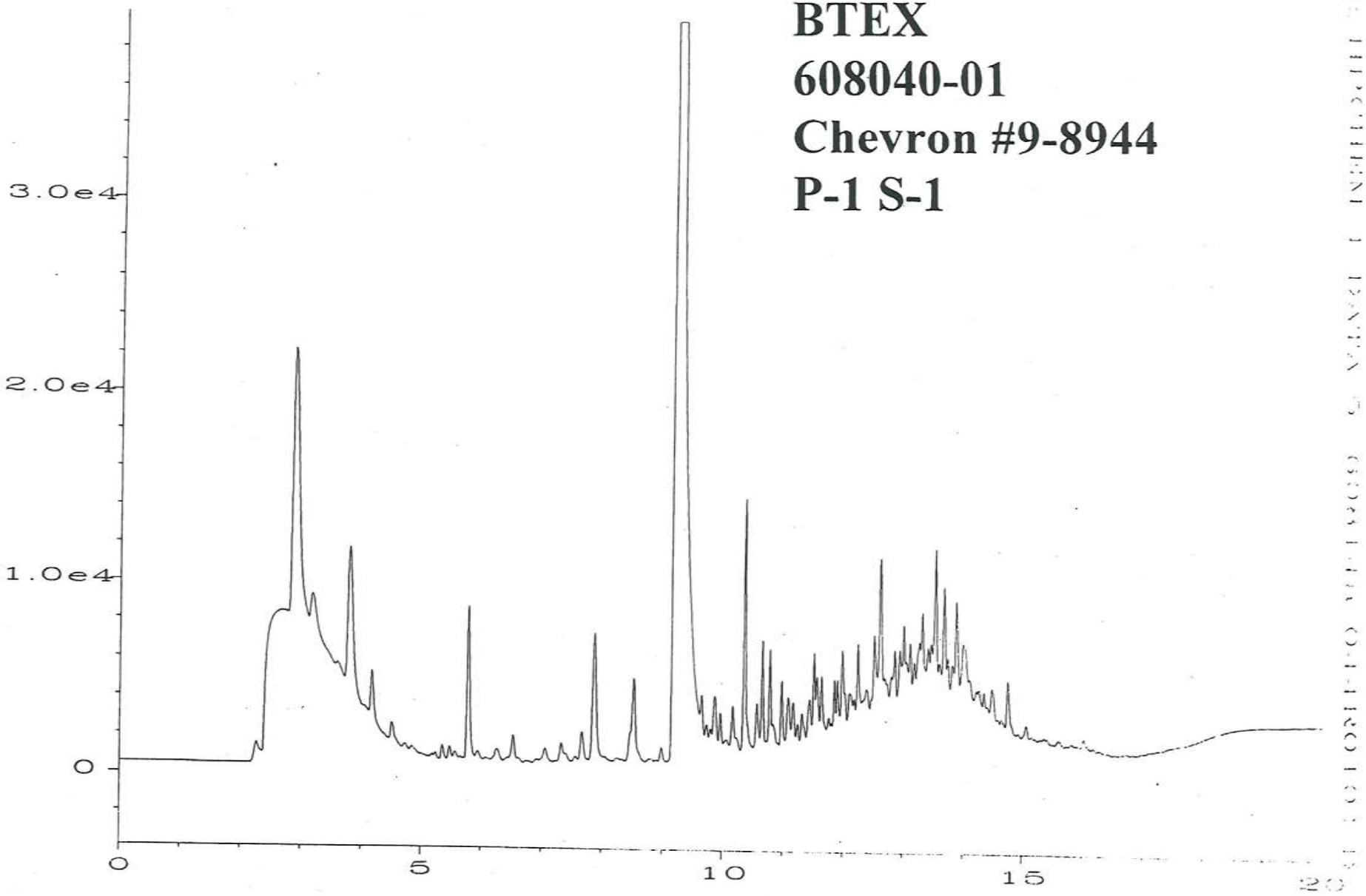
Logarithm of the Gasoline/Benzene Ratio

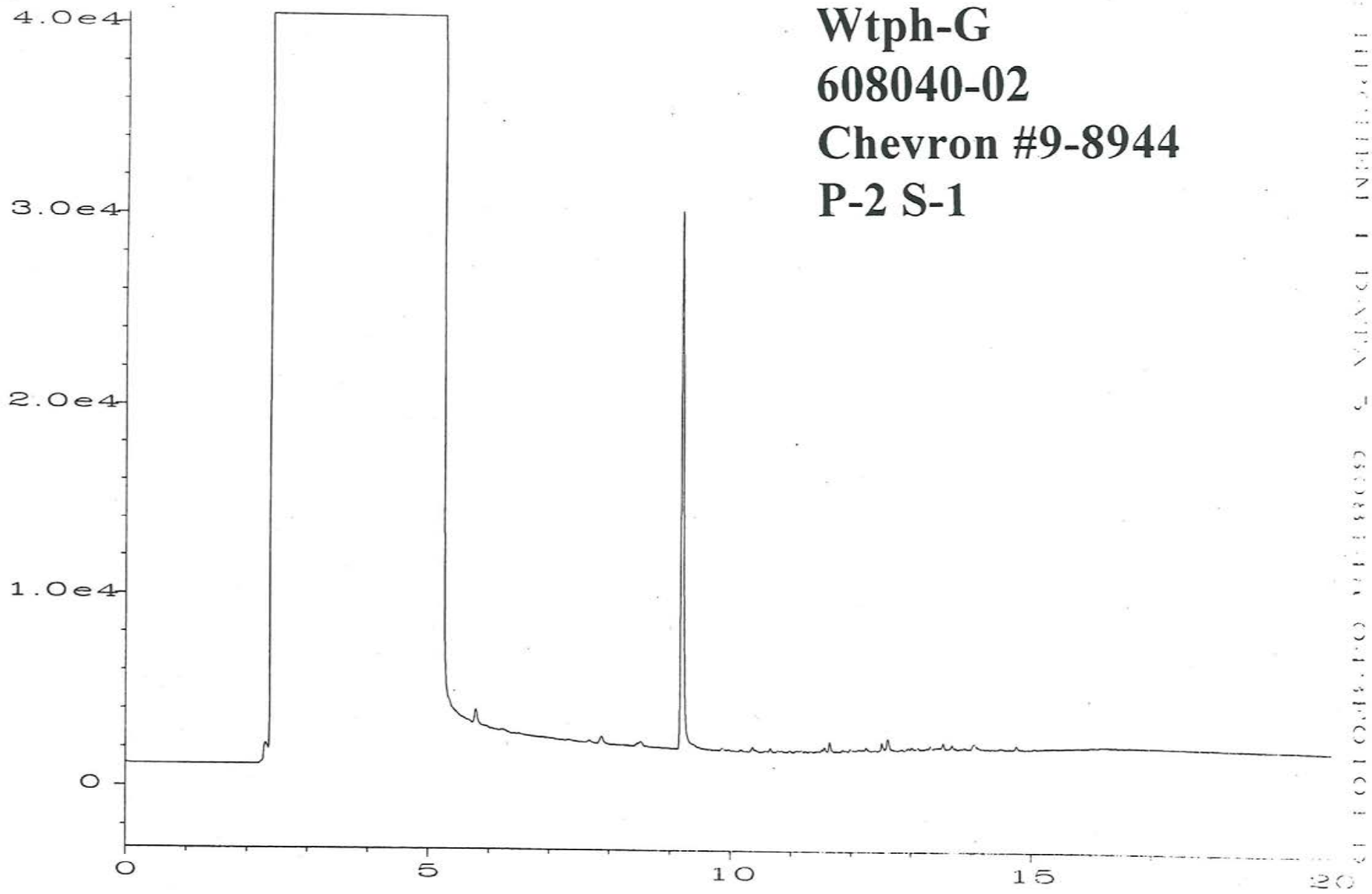


Appendix B

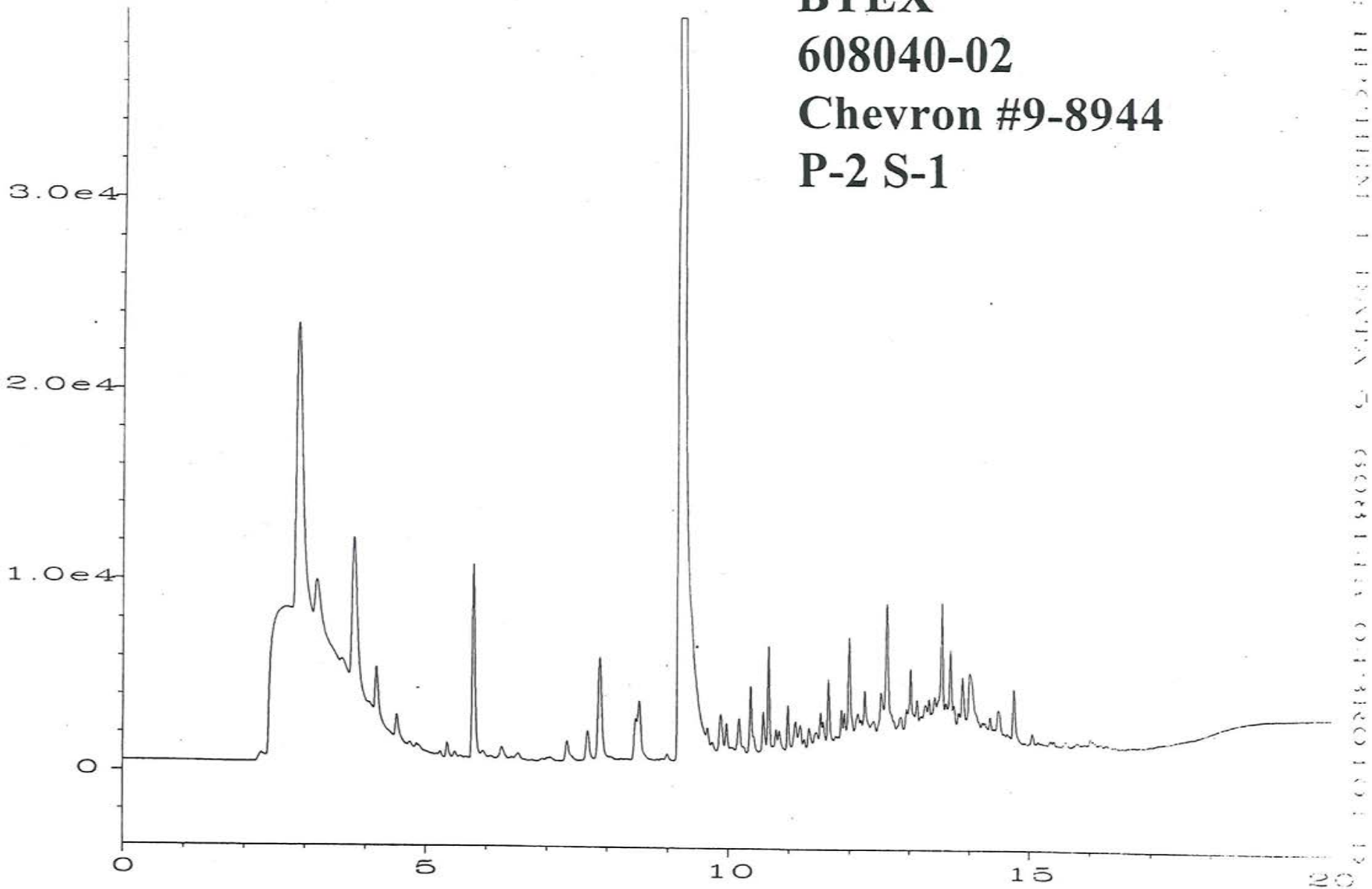

4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20
Wtph-G
608040-01
Chevron #9-8944
P-1 S-1

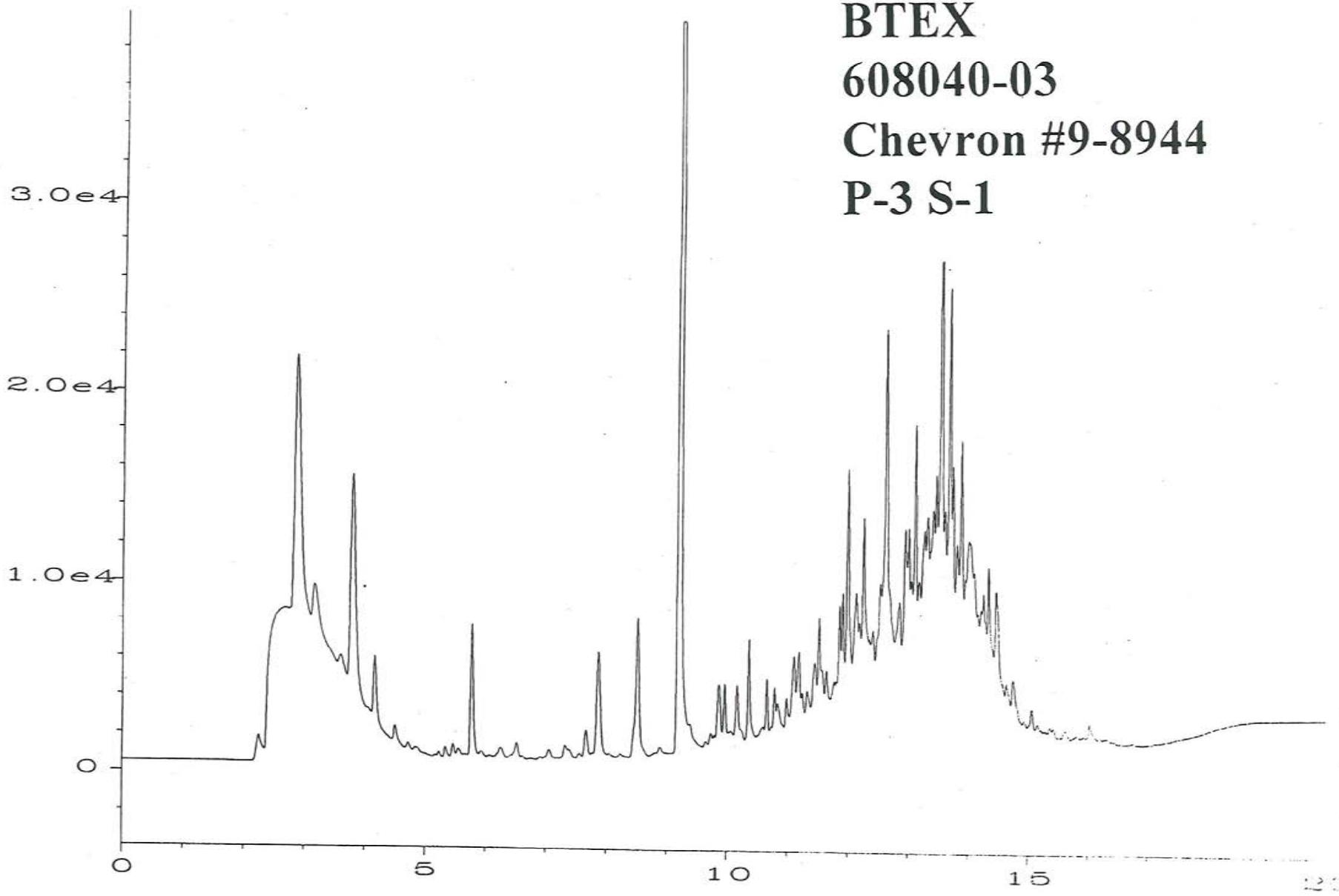
BTEX
608040-01
Chevron #9-8944
P-1 S-1

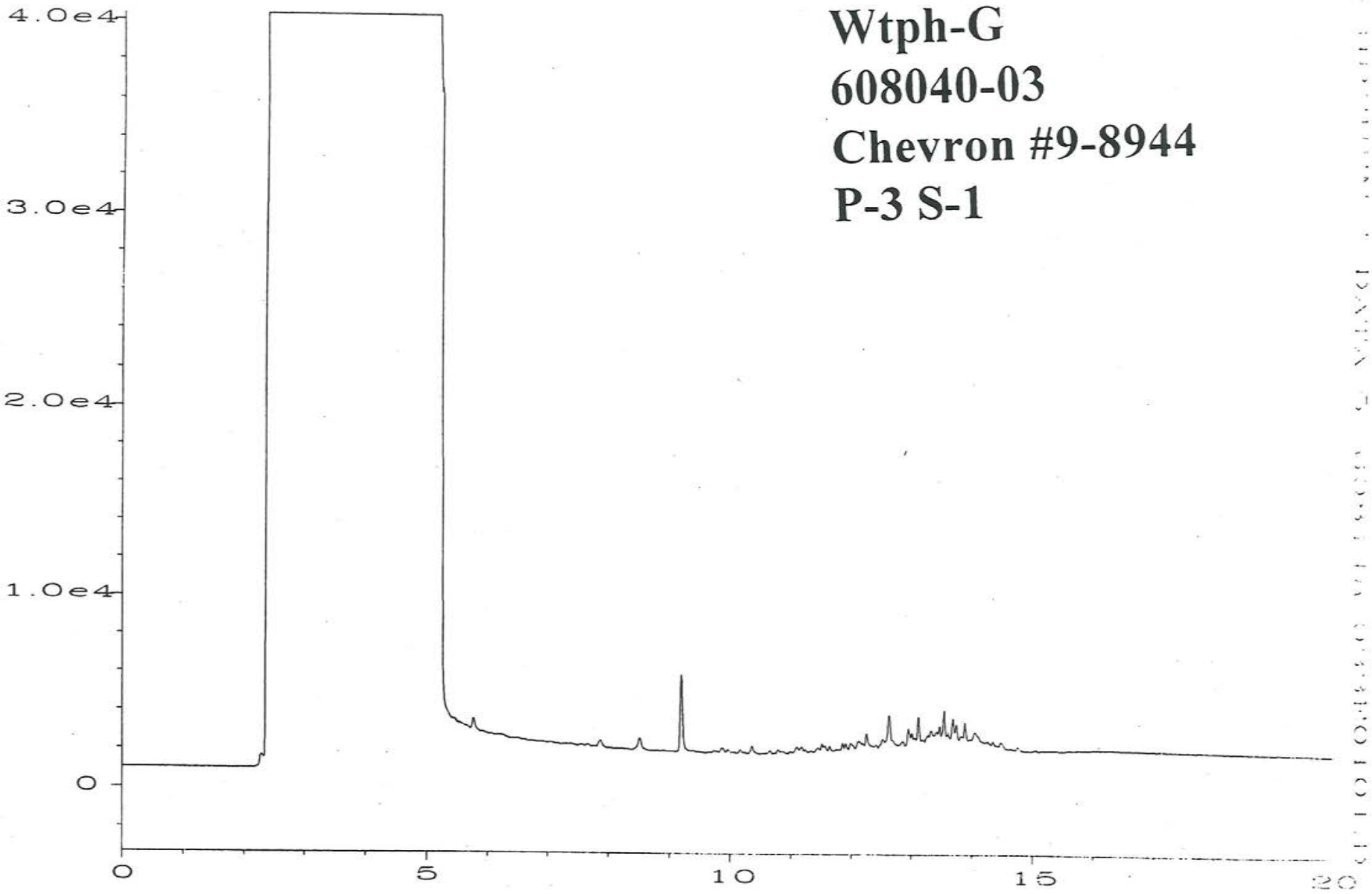



Wtph-G
608040-02
Chevron #9-8944
P-2 S-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

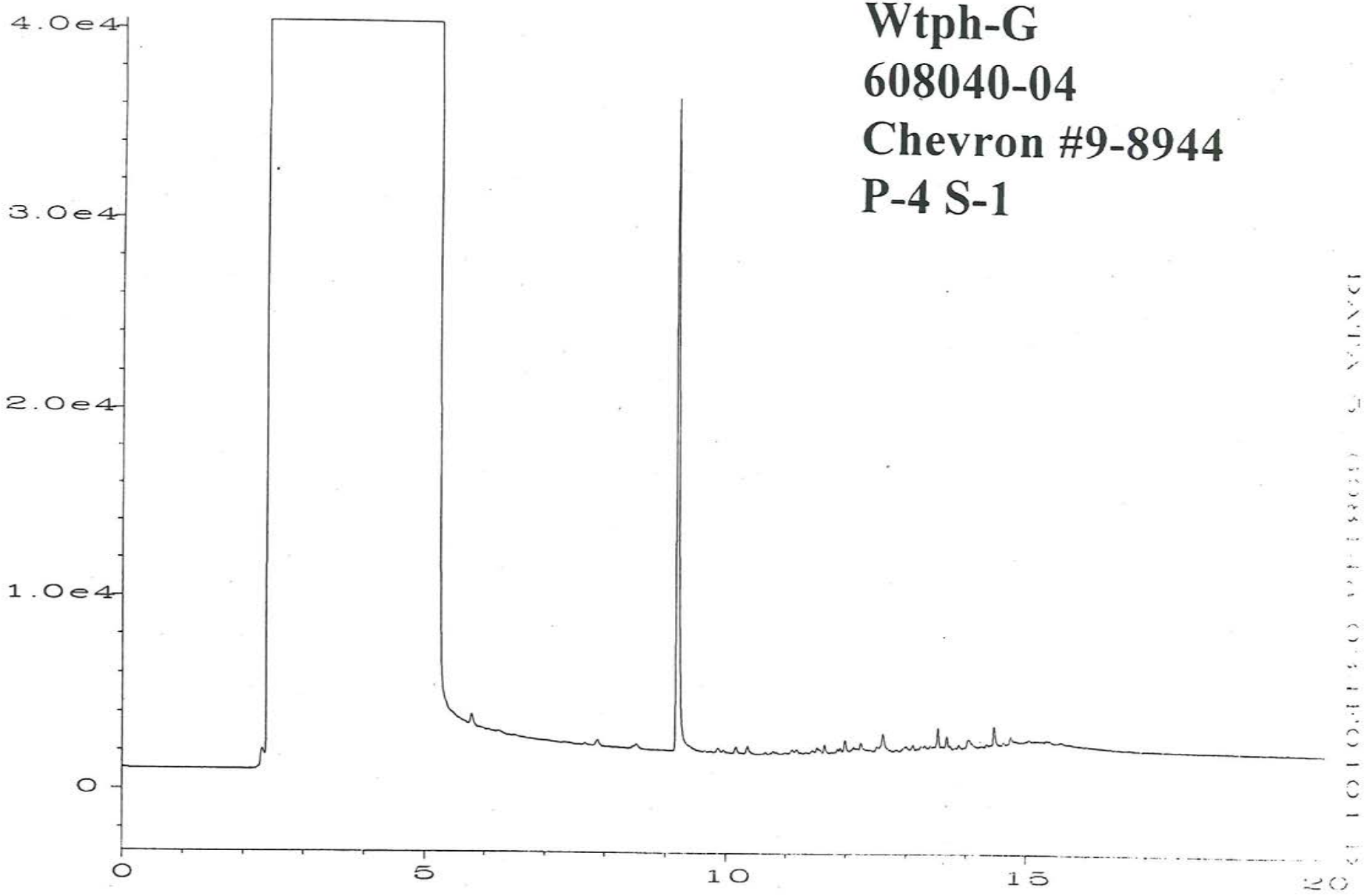
BTEX
608040-02
Chevron #9-8944
P-2 S-1



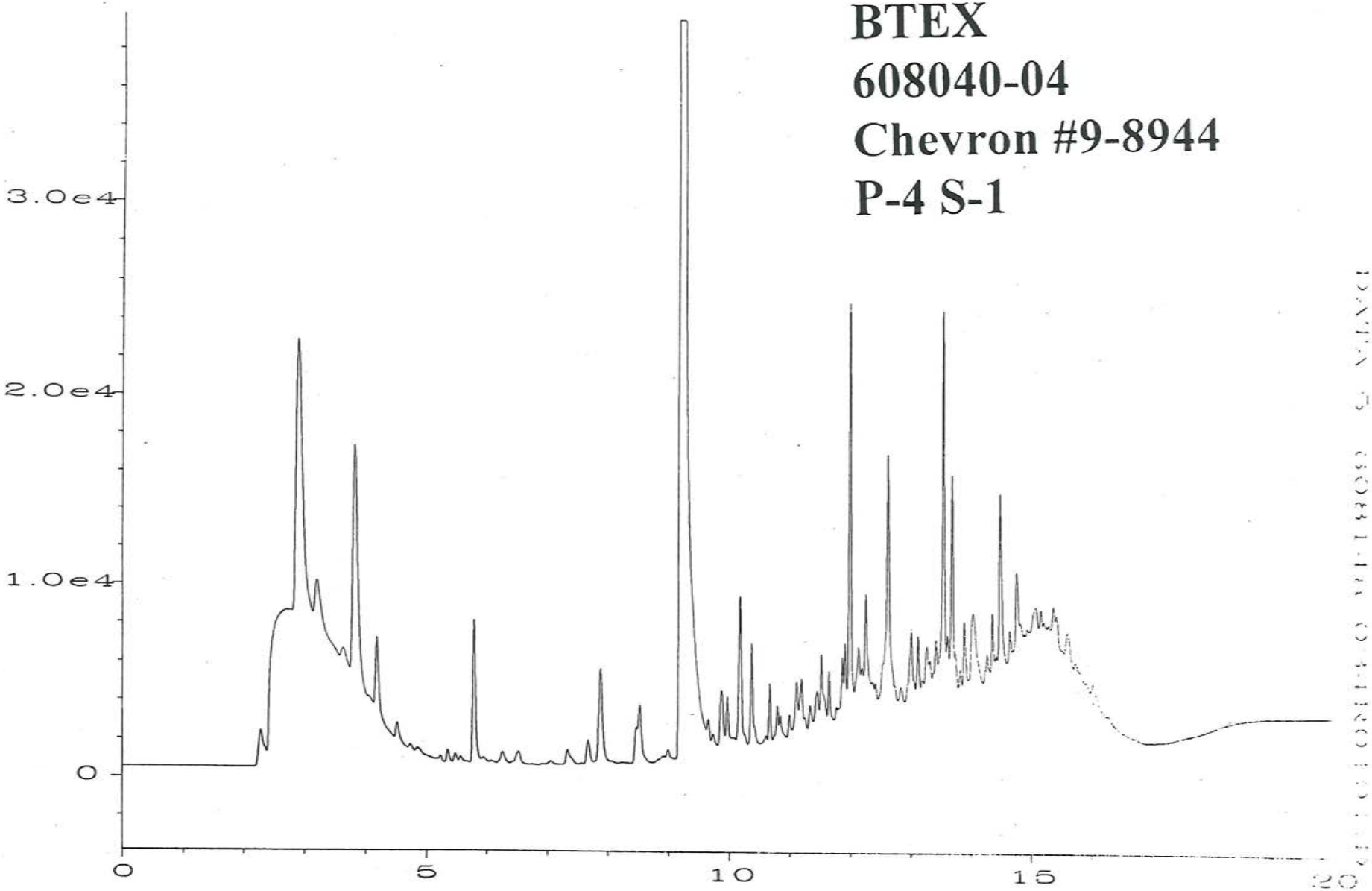

BTEX
608040-03
Chevron #9-8944
P-3 S-1
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

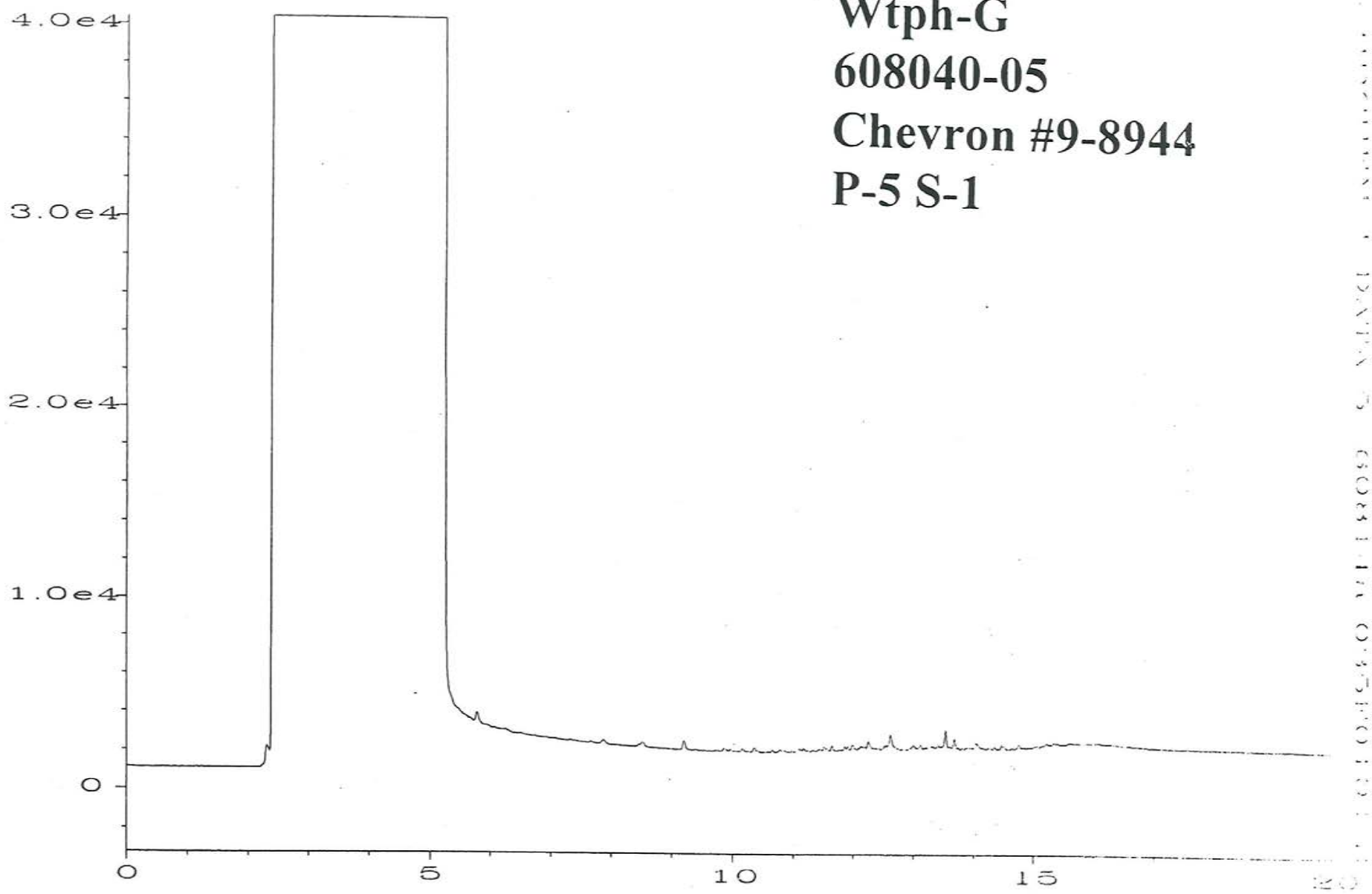


Wtph-G
608040-03
Chevron #9-8944
P-3 S-1

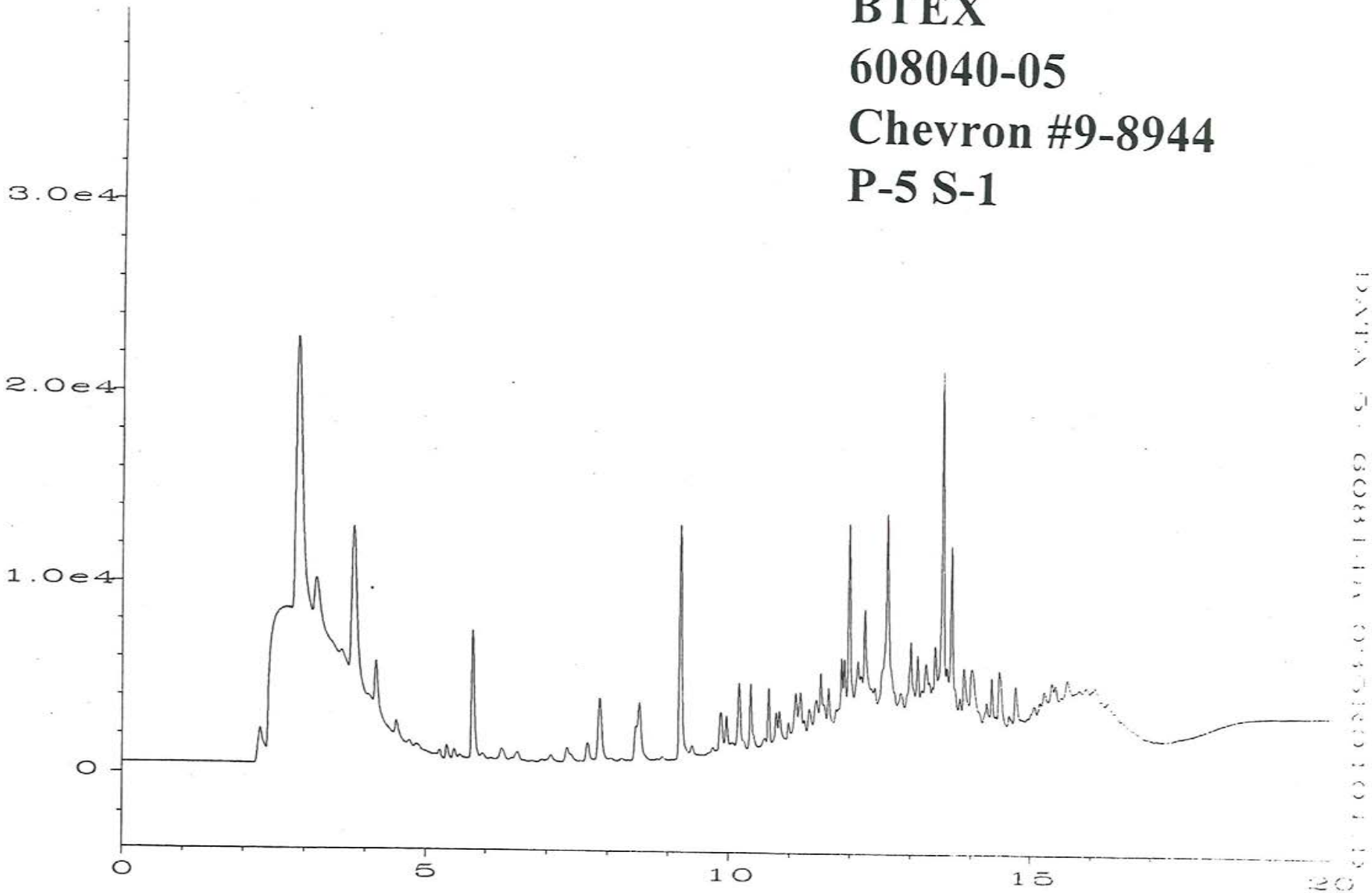

Wtph-G
608040-04
Chevron #9-8944
P-4 S-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

BTEX
608040-04
Chevron #9-8944
P-4 S-1

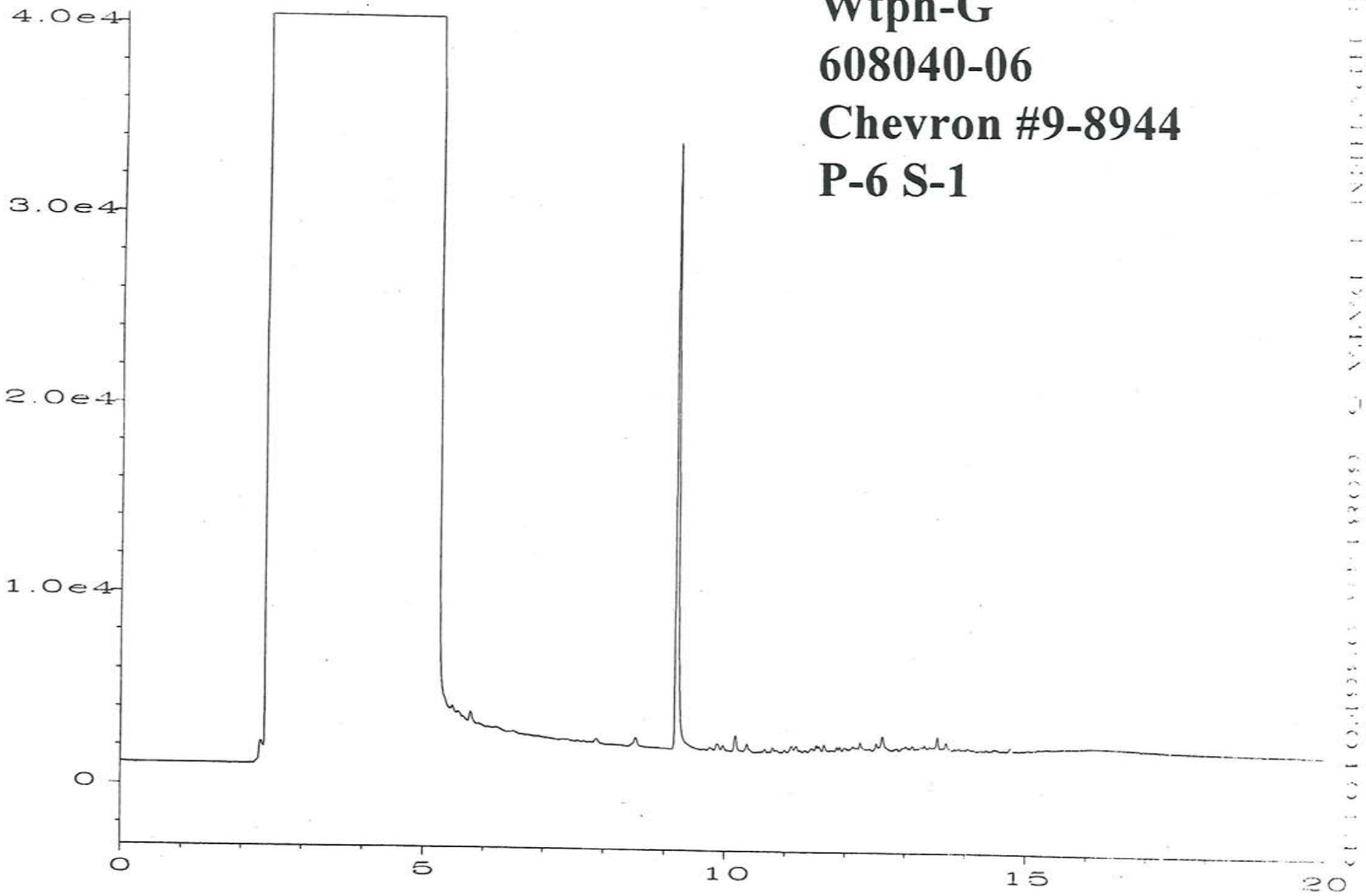



Wtph-G
608040-05
Chevron #9-8944
P-5 S-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

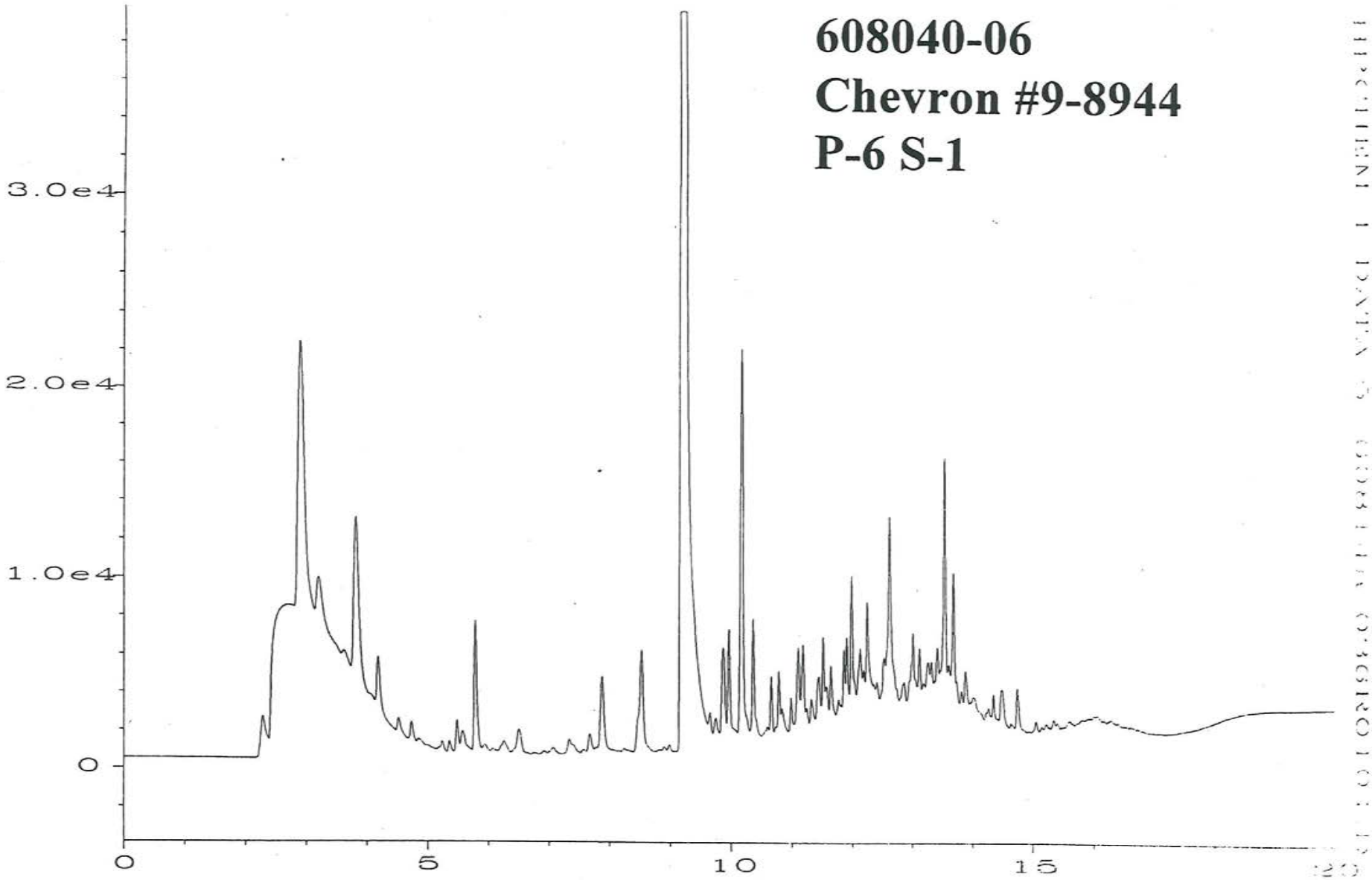
BTEX
608040-05
Chevron #9-8944
P-5 S-1

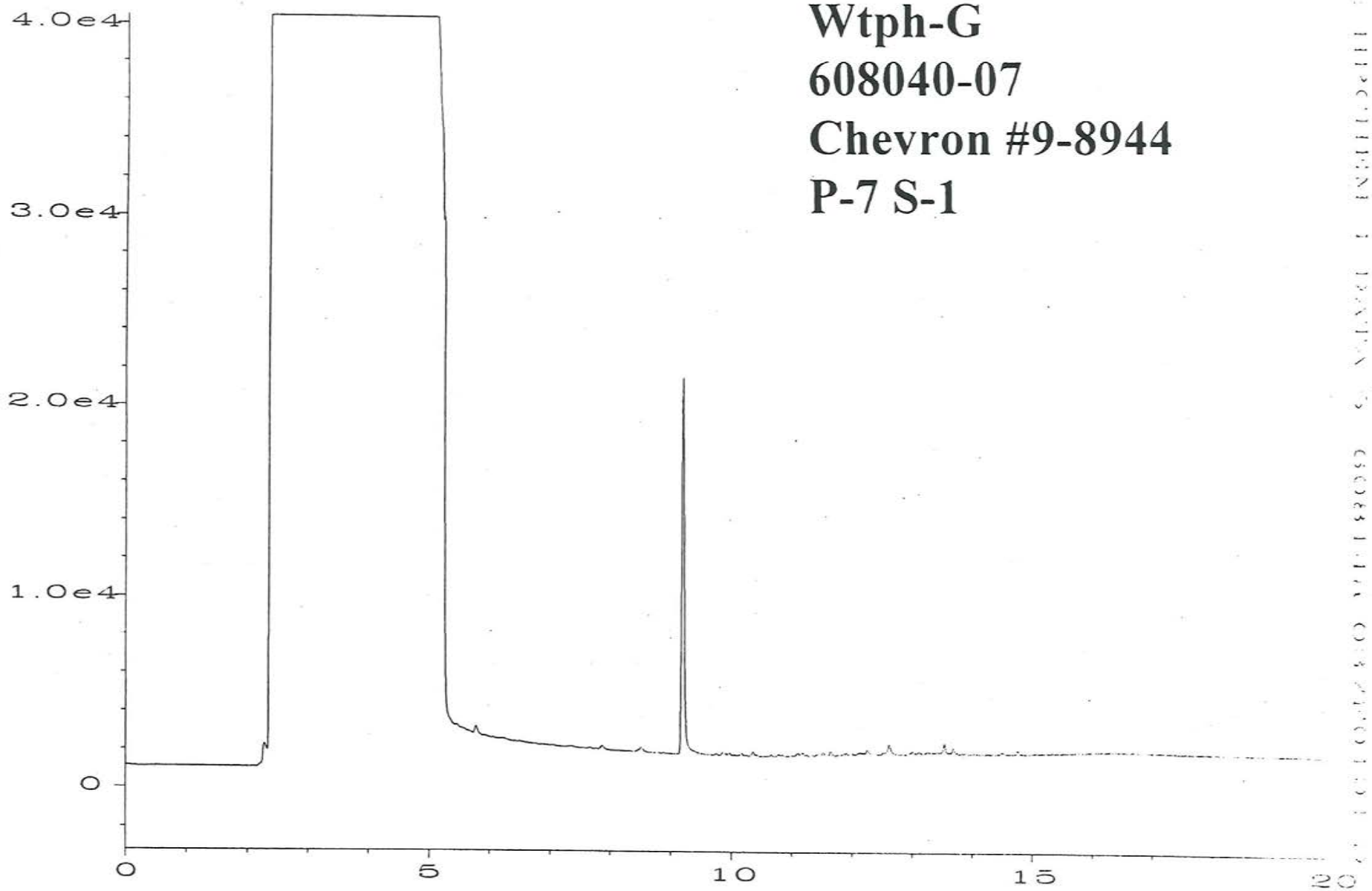


Wtph-G
608040-06
Chevron #9-8944
P-6 S-1



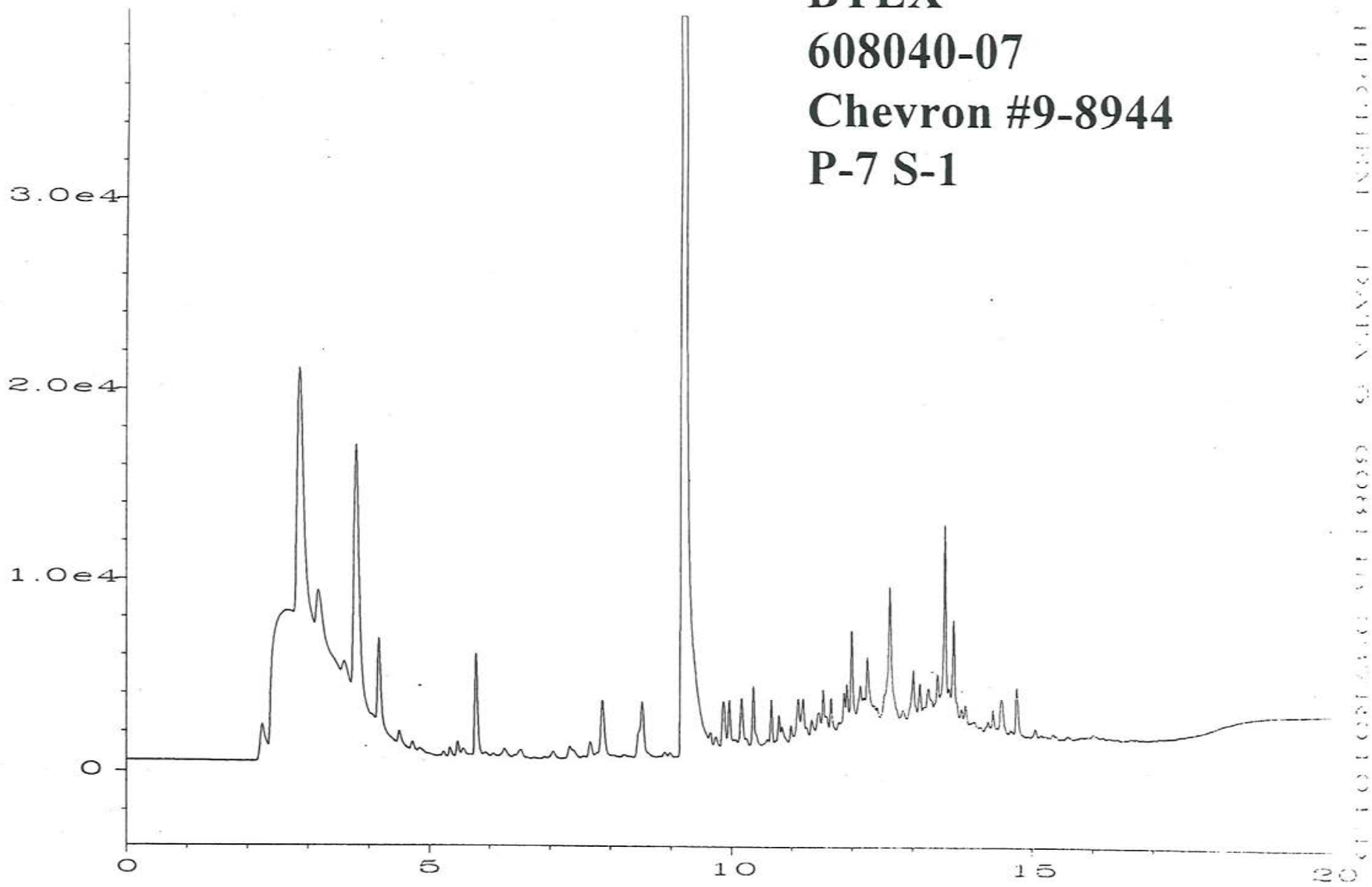
BTEX
608040-06
Chevron #9-8944
P-6 S-1



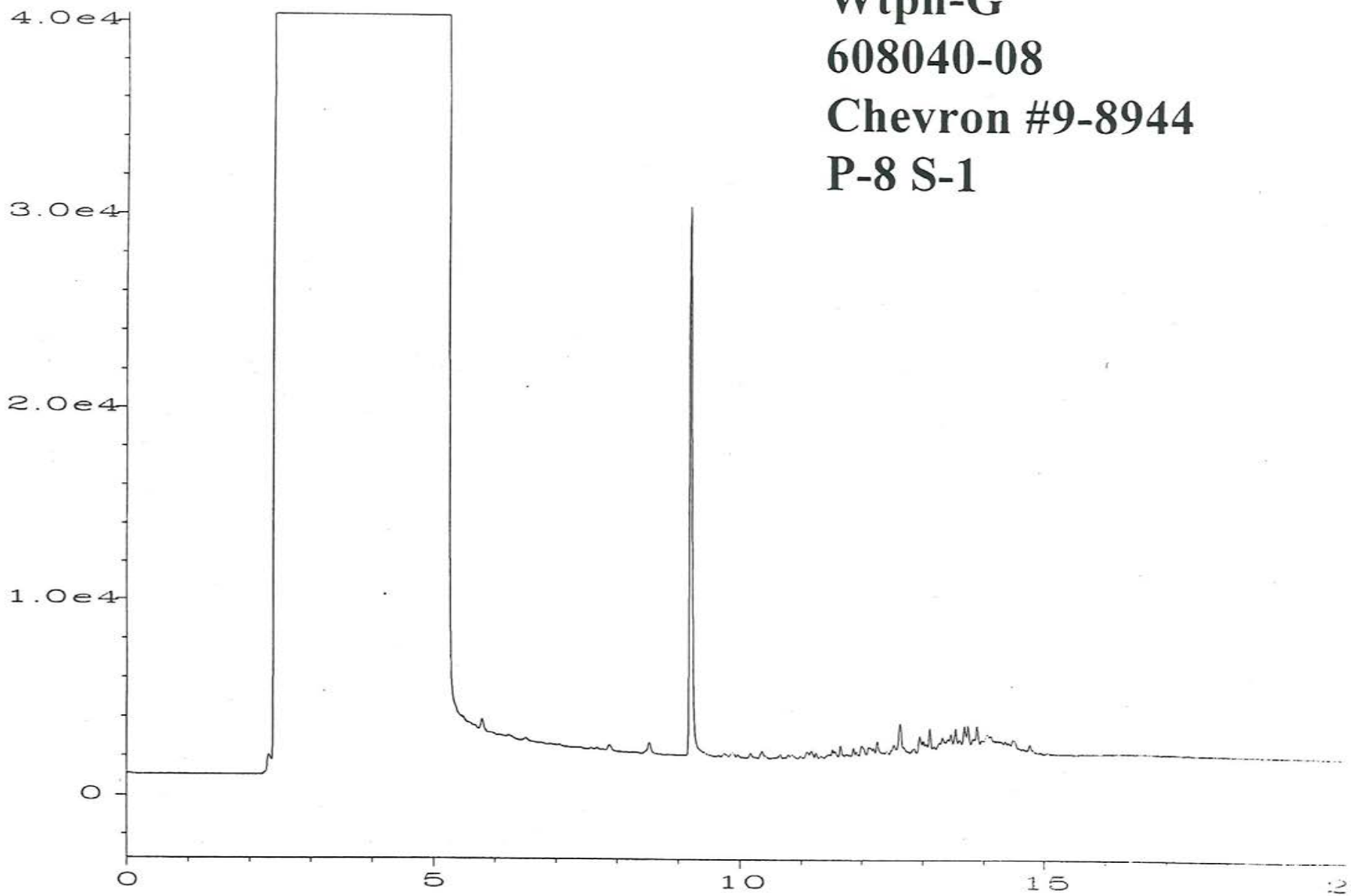


Wtph-G
608040-07
Chevron #9-8944
P-7 S-1

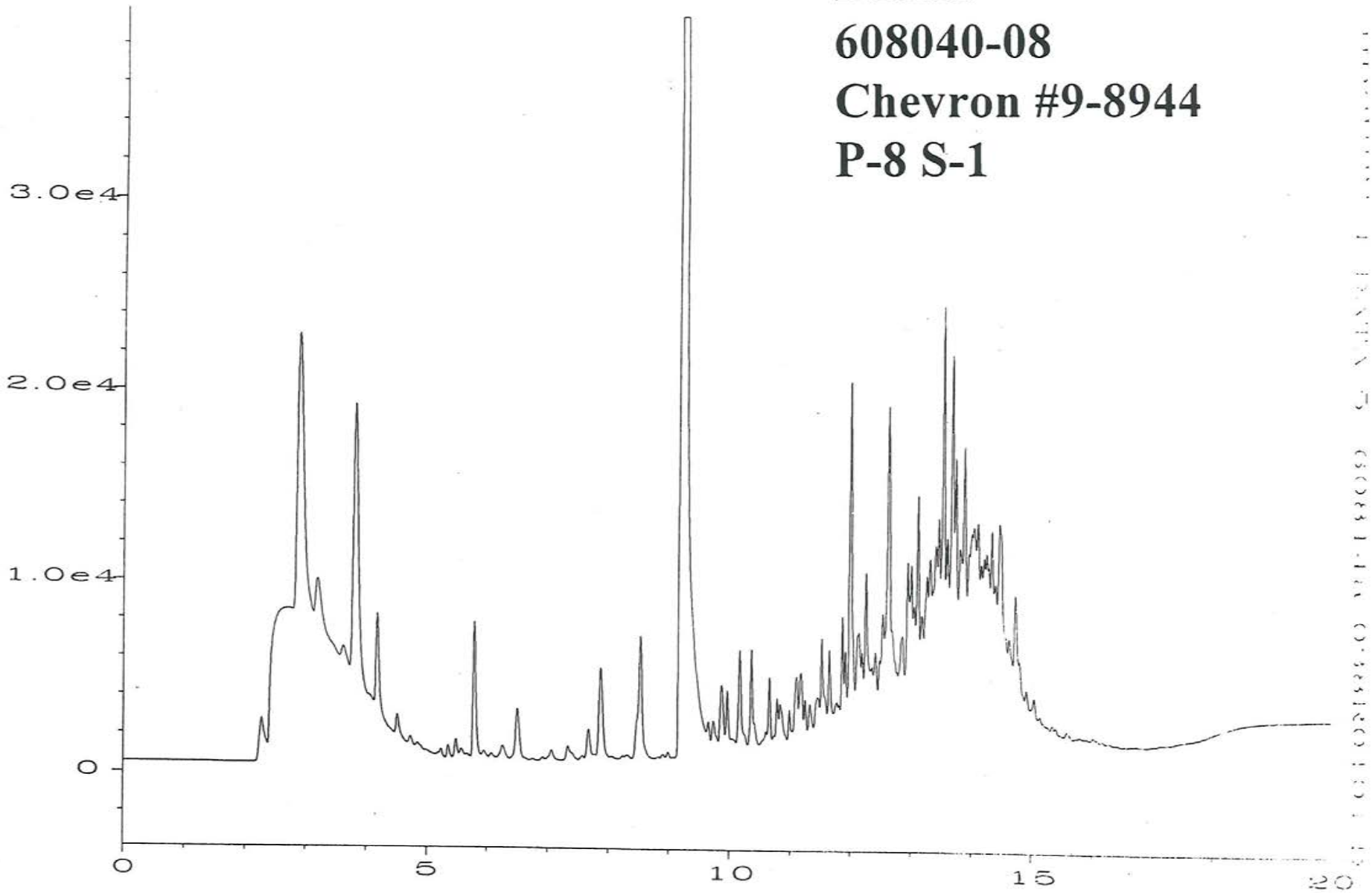
BTEX
608040-07
Chevron #9-8944
P-7 S-1

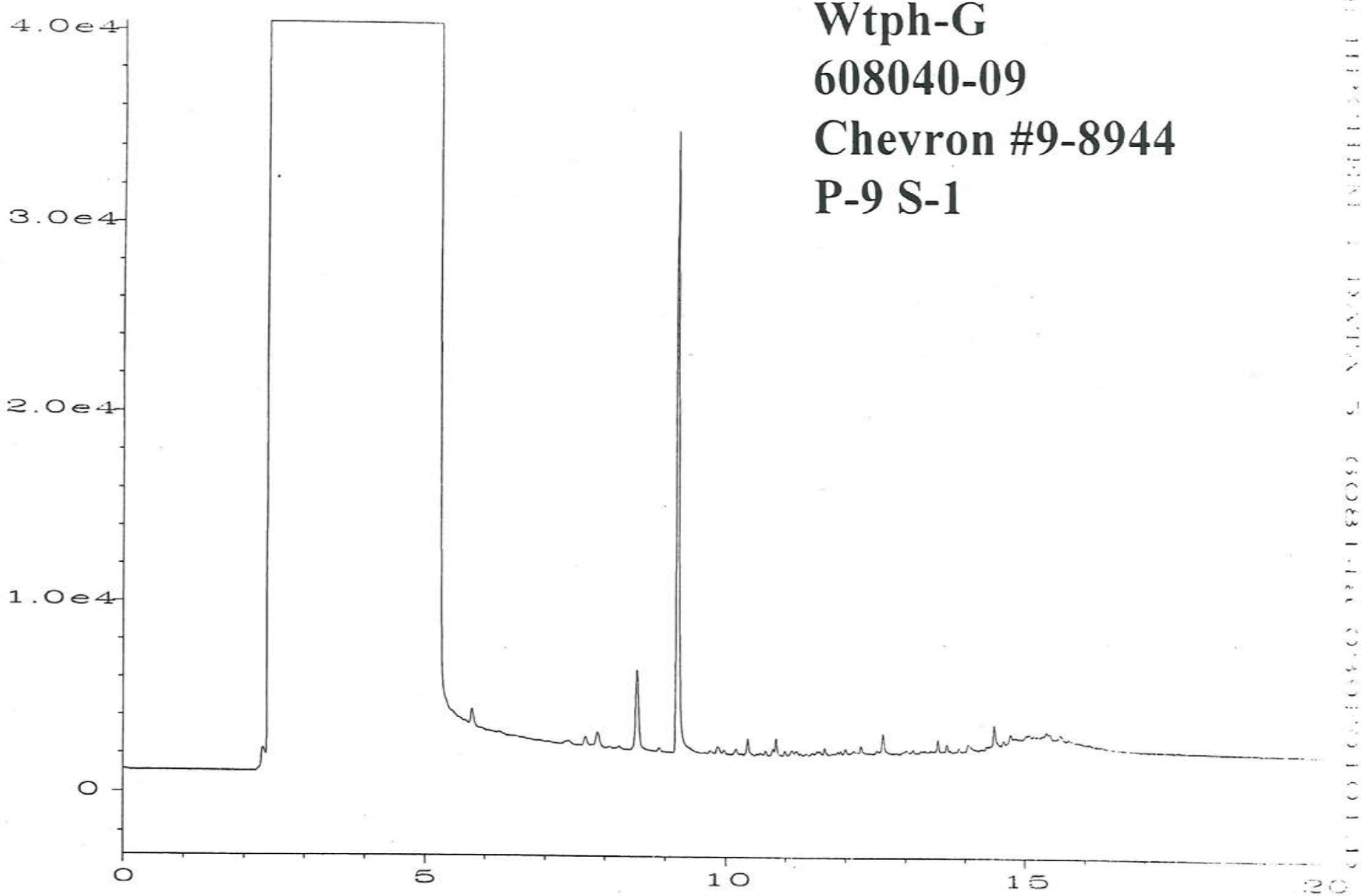


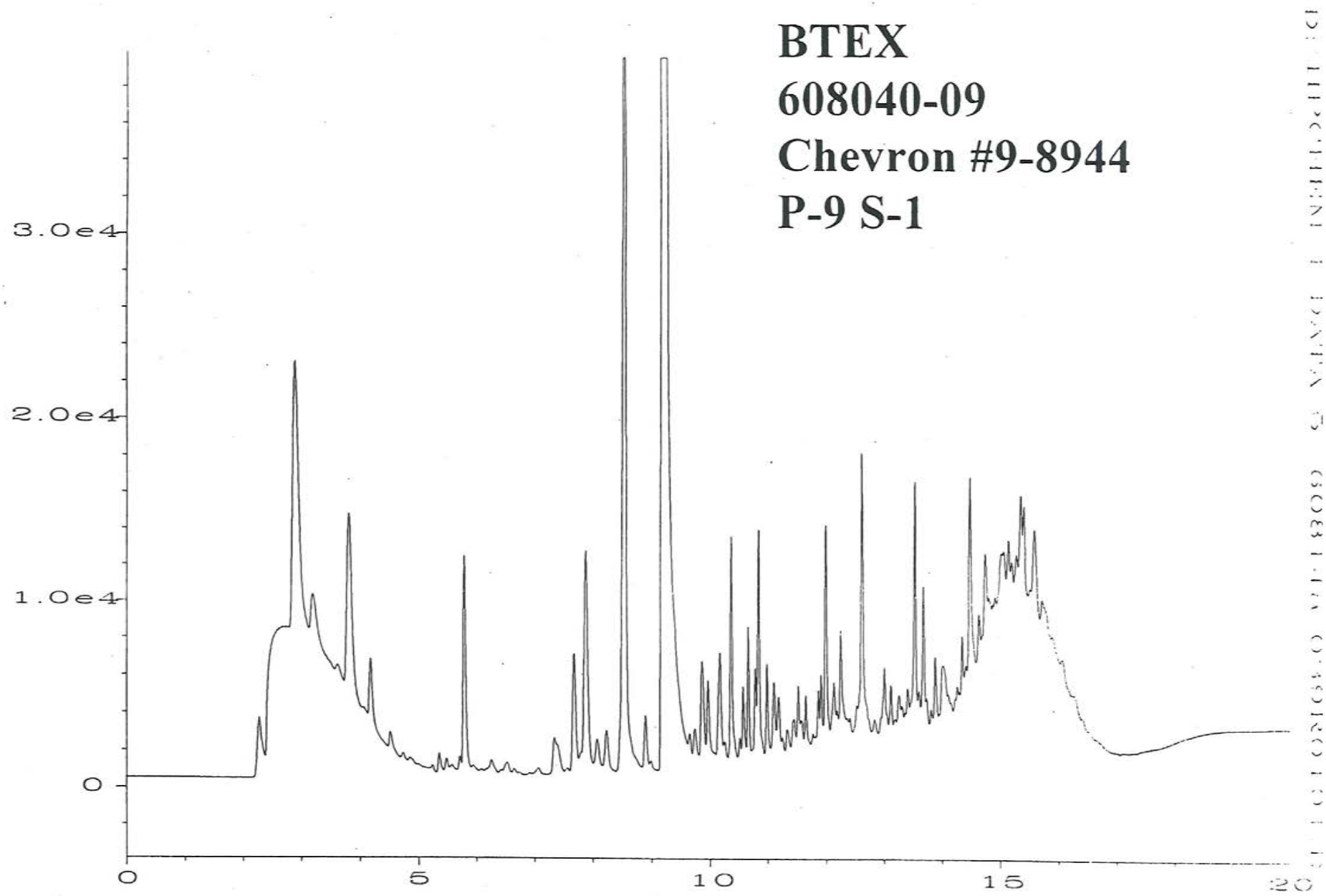
Wtph-G
608040-08
Chevron #9-8944
P-8 S-1

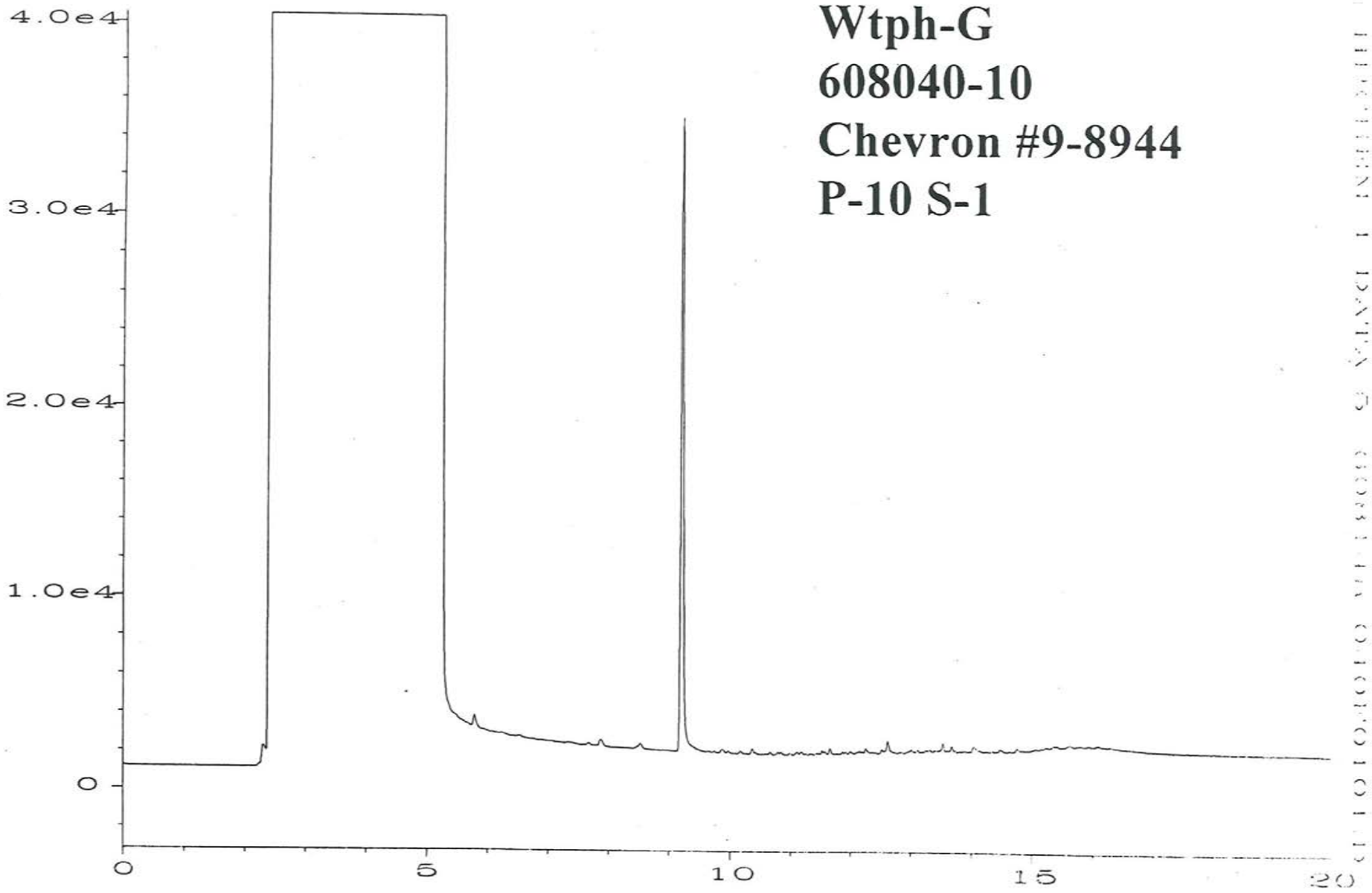


BTEX
608040-08
Chevron #9-8944
P-8 S-1

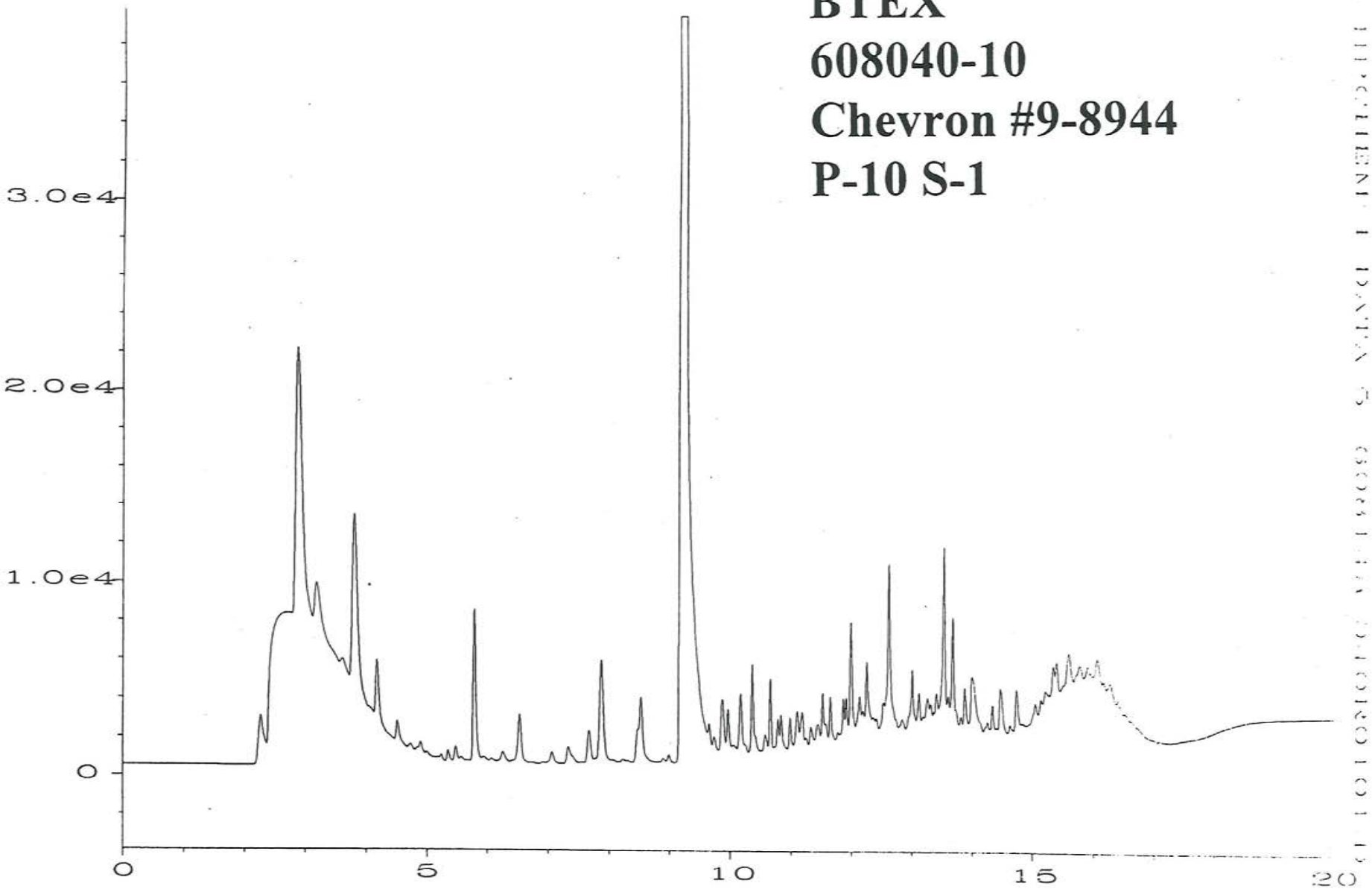



Wtph-G
608040-09
Chevron #9-8944
P-9 S-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

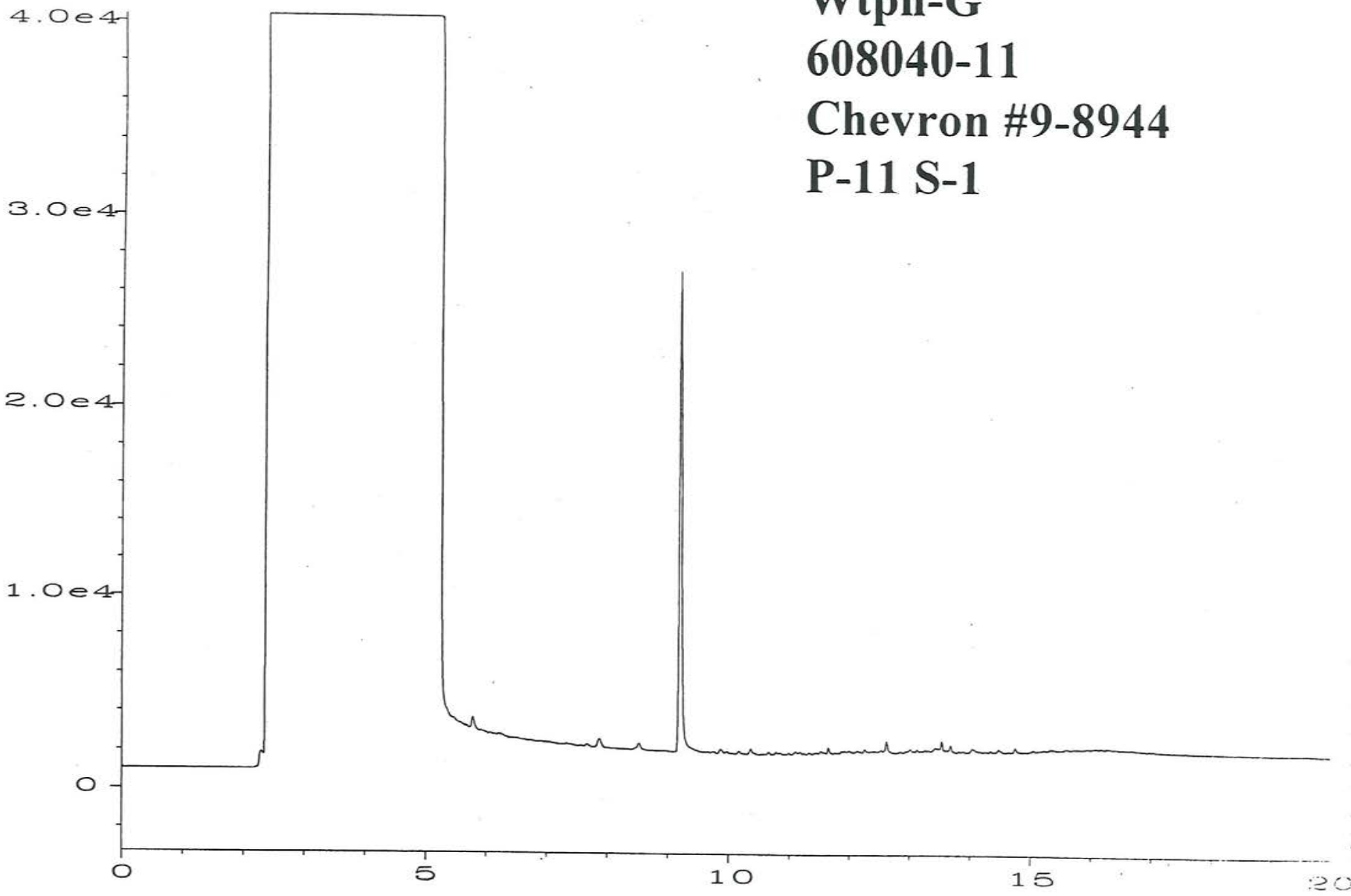

BTEX
608040-09
Chevron #9-8944
P-9 S-1
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20


Wtph-G
608040-10
Chevron #9-8944
P-10 S-1
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

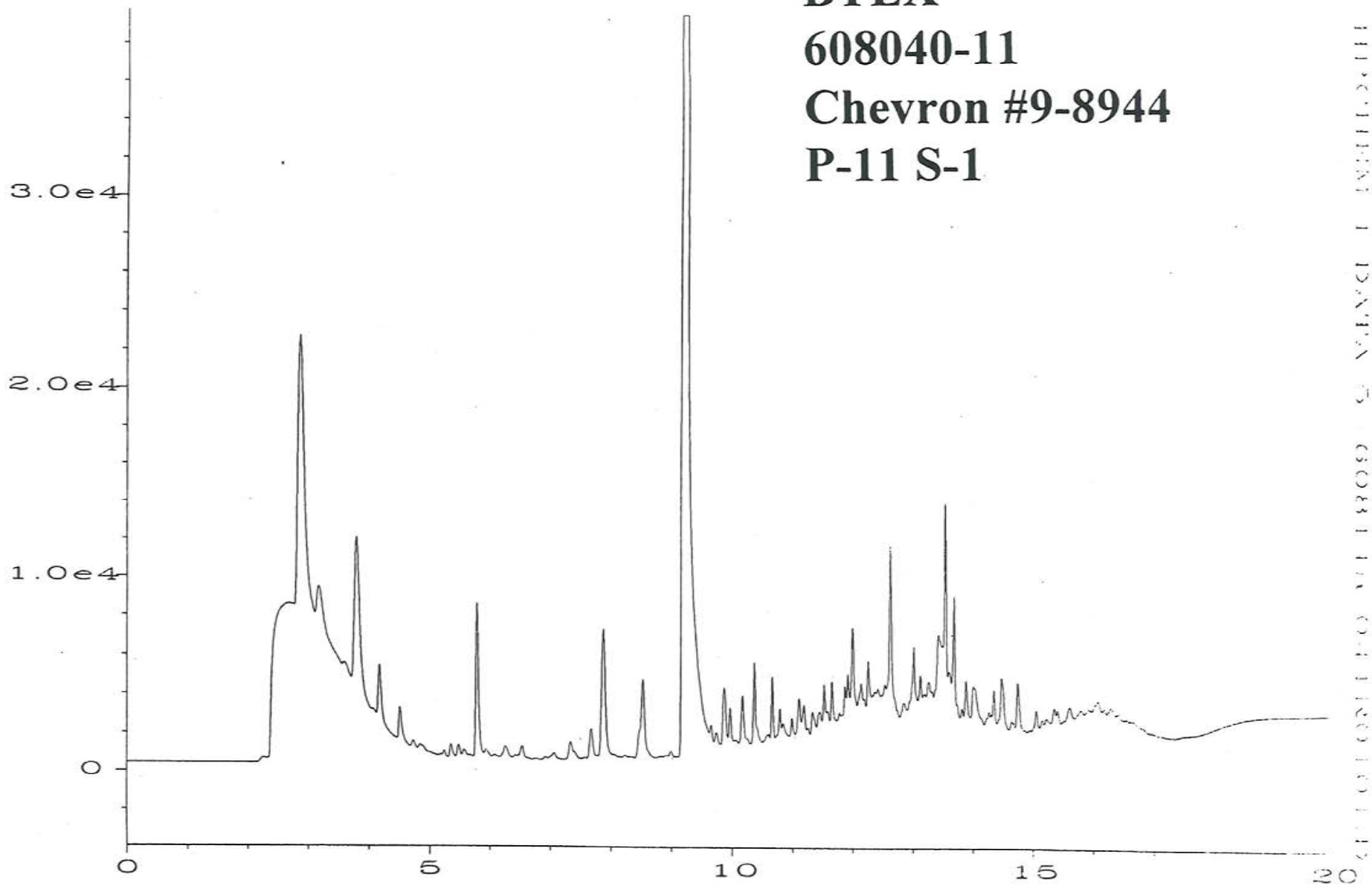
BTEX
608040-10
Chevron #9-8944
P-10 S-1



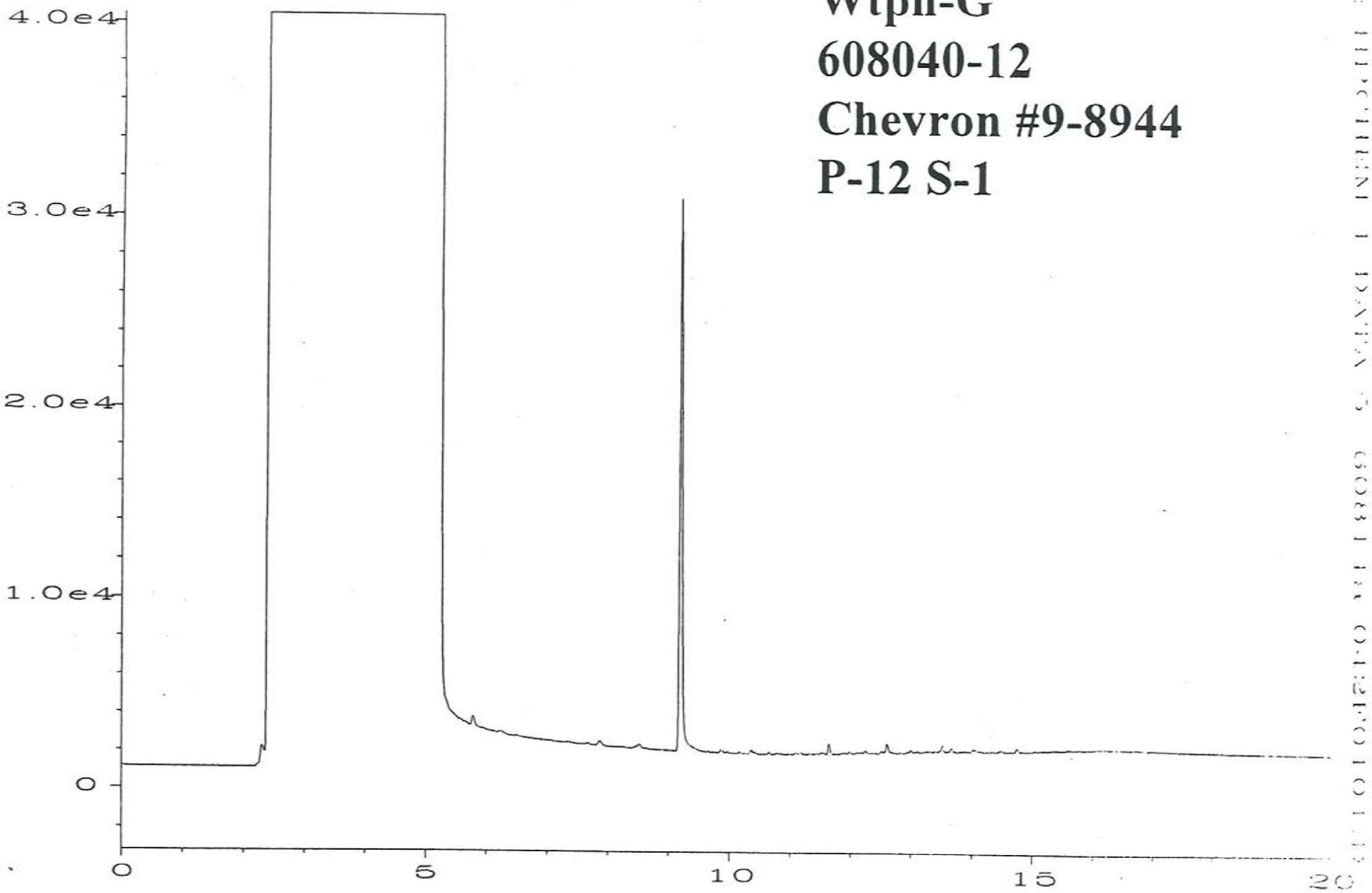
Wtph-G
608040-11
Chevron #9-8944
P-11 S-1



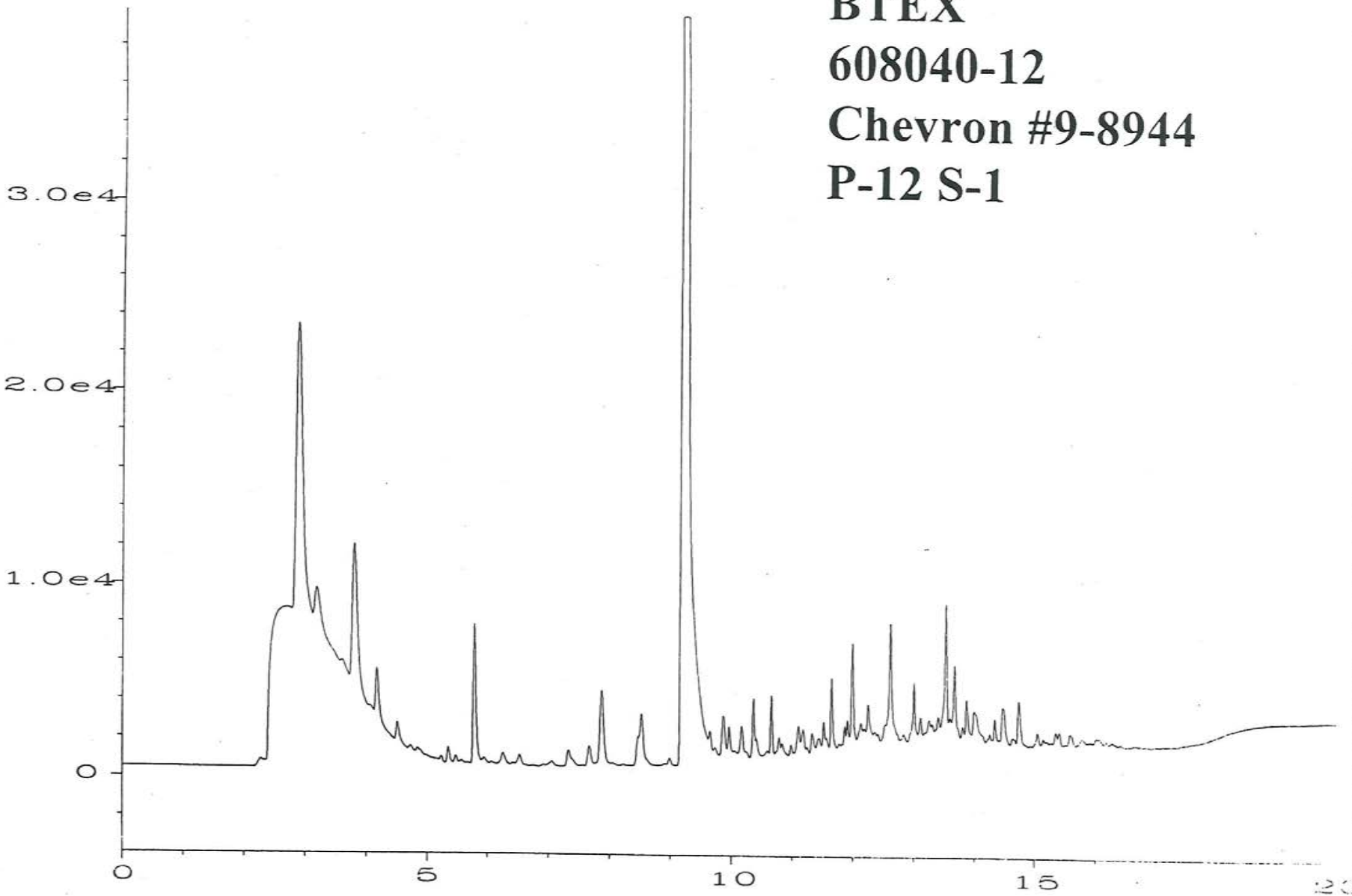
BTEX
608040-11
Chevron #9-8944
P-11 S-1



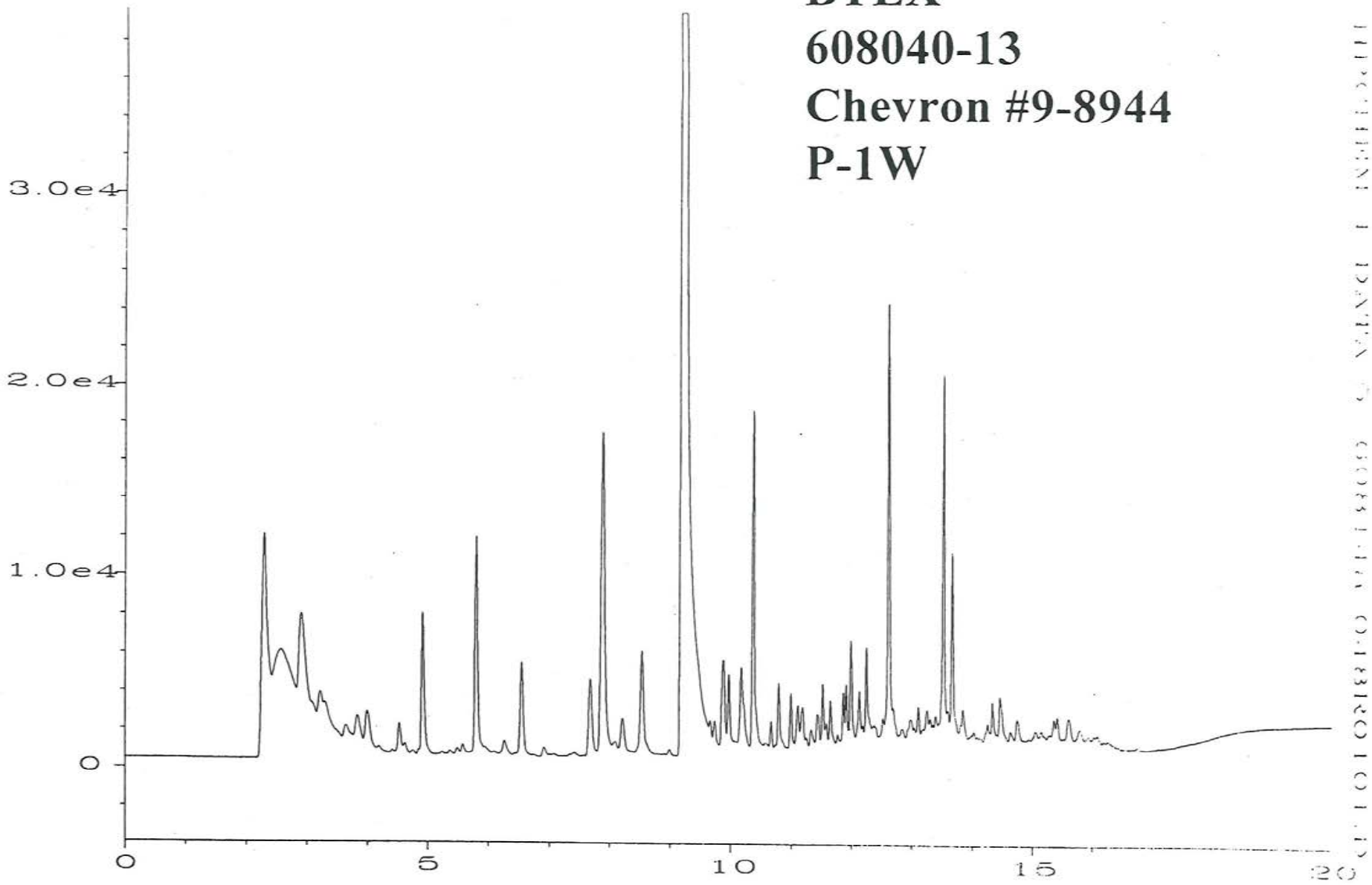
Wtph-G
608040-12
Chevron #9-8944
P-12 S-1



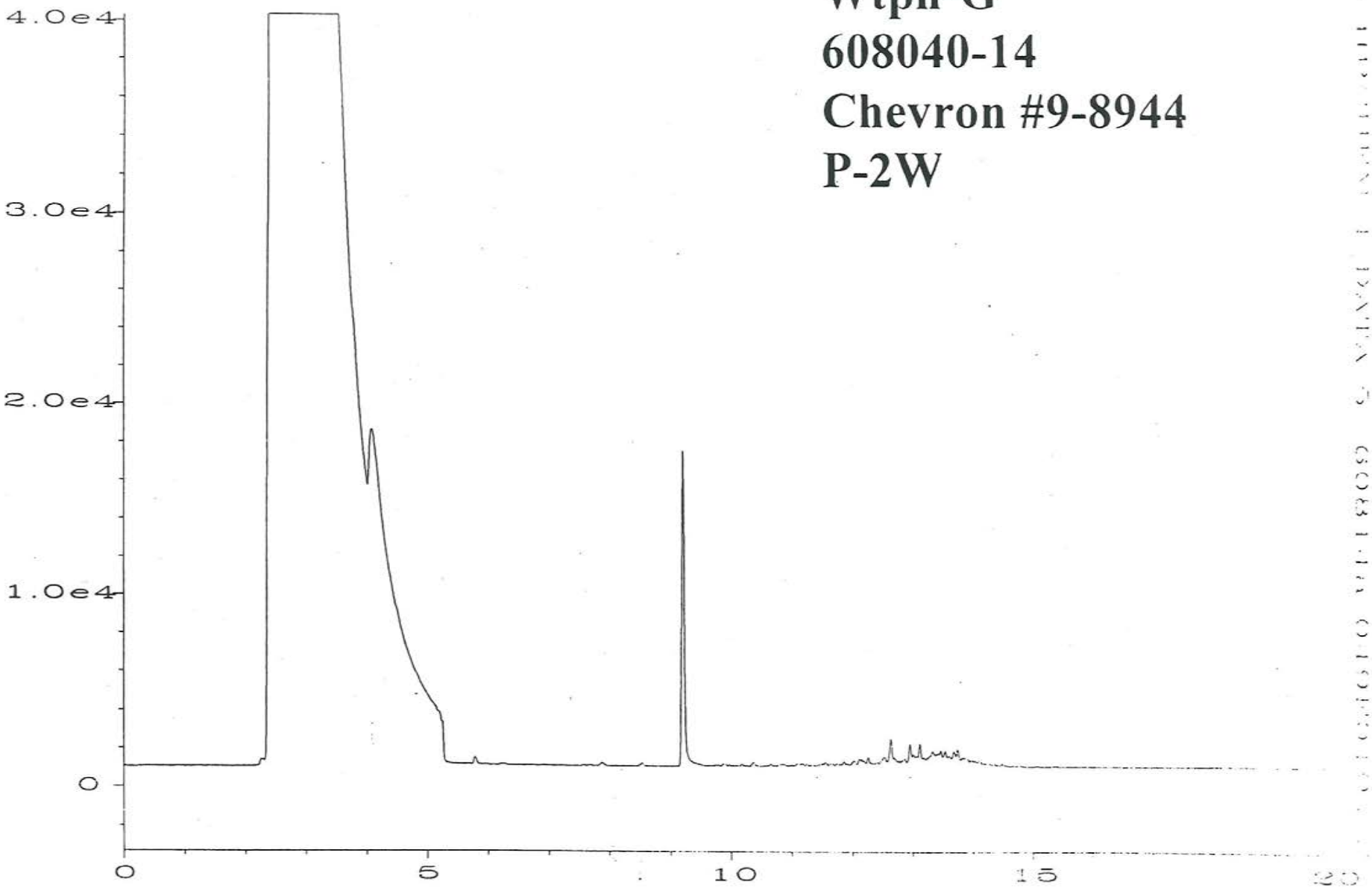
BTEX
608040-12
Chevron #9-8944
P-12 S-1

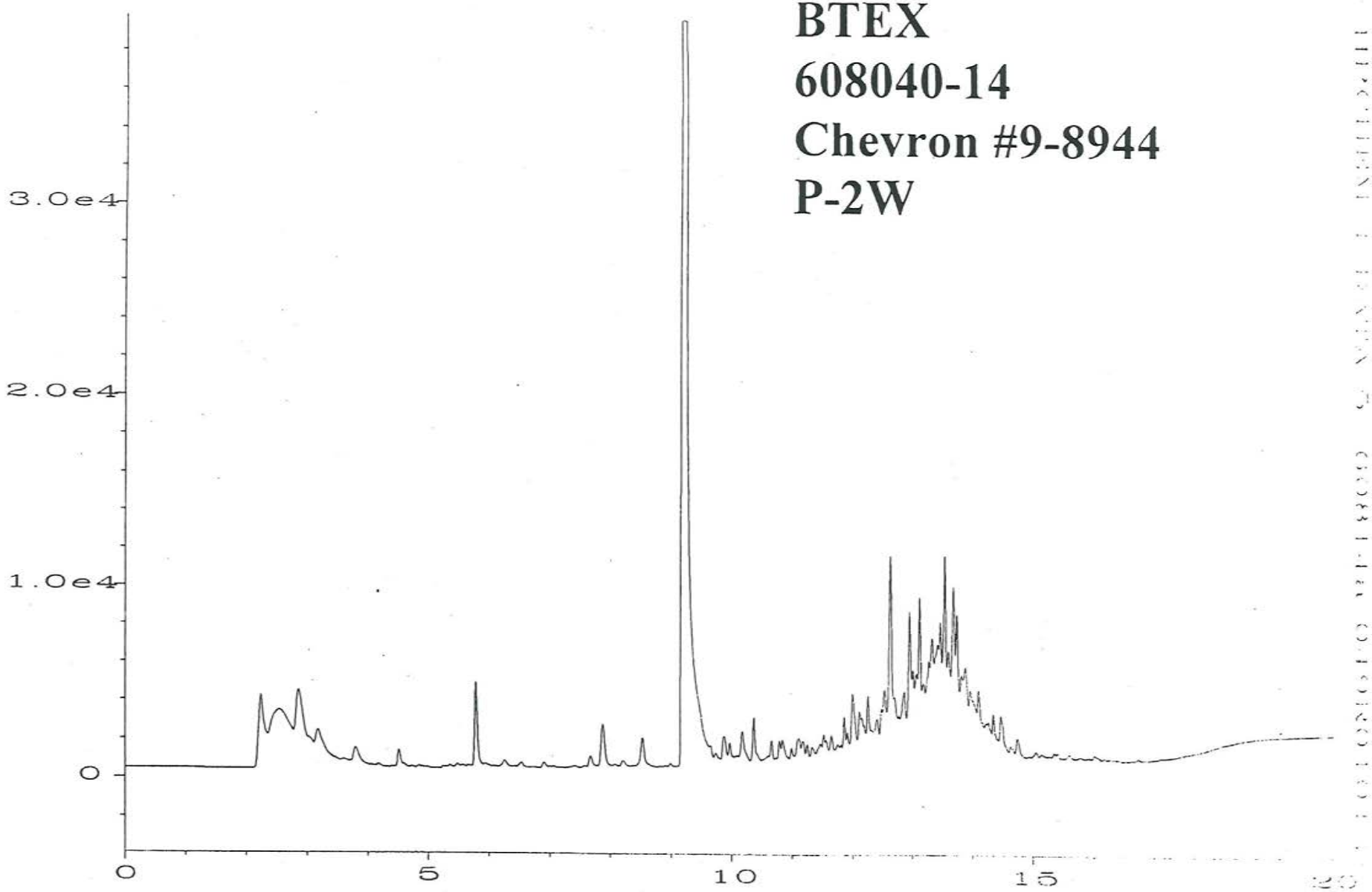


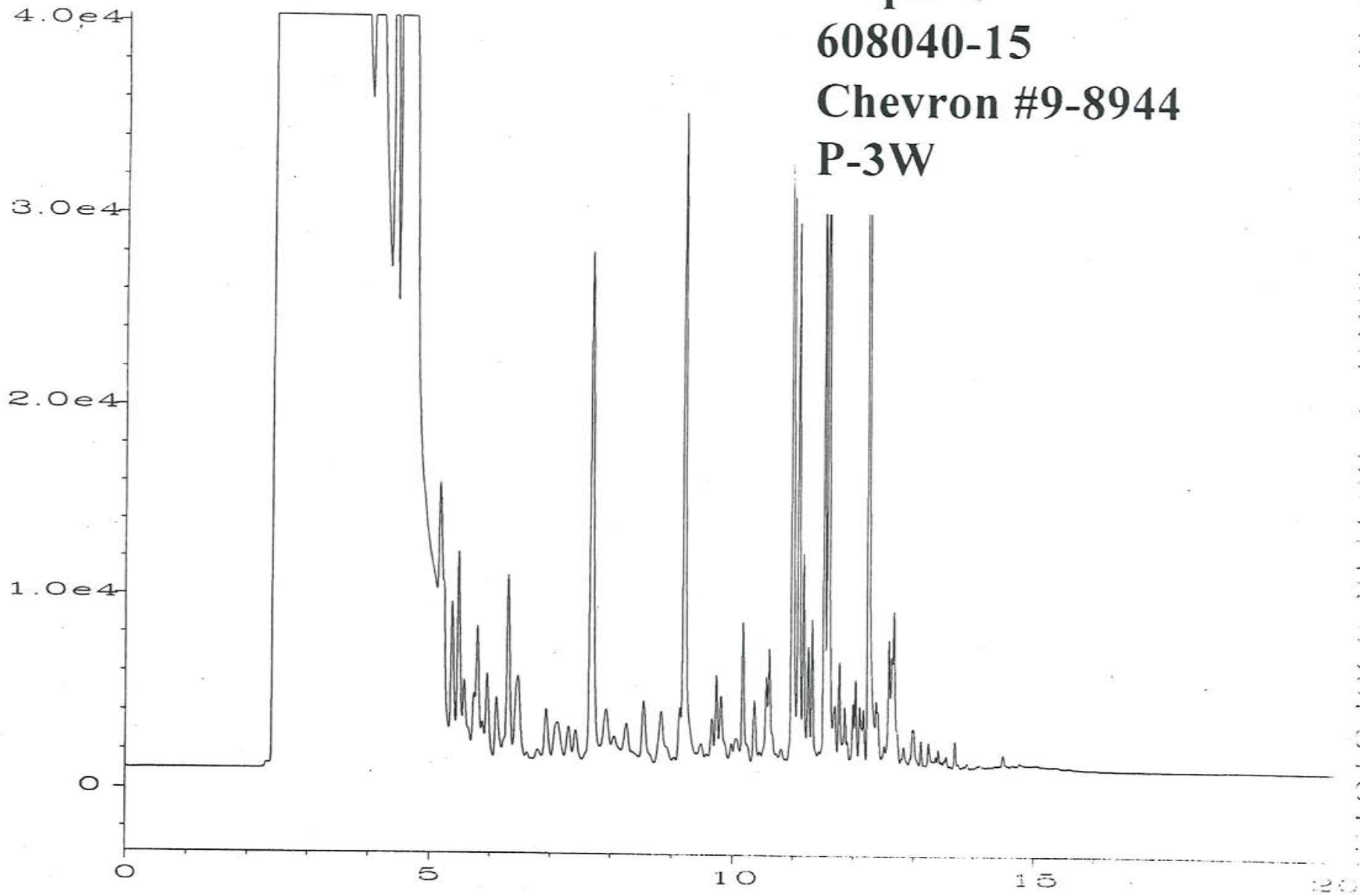
BTEX
608040-13
Chevron #9-8944
P-1W



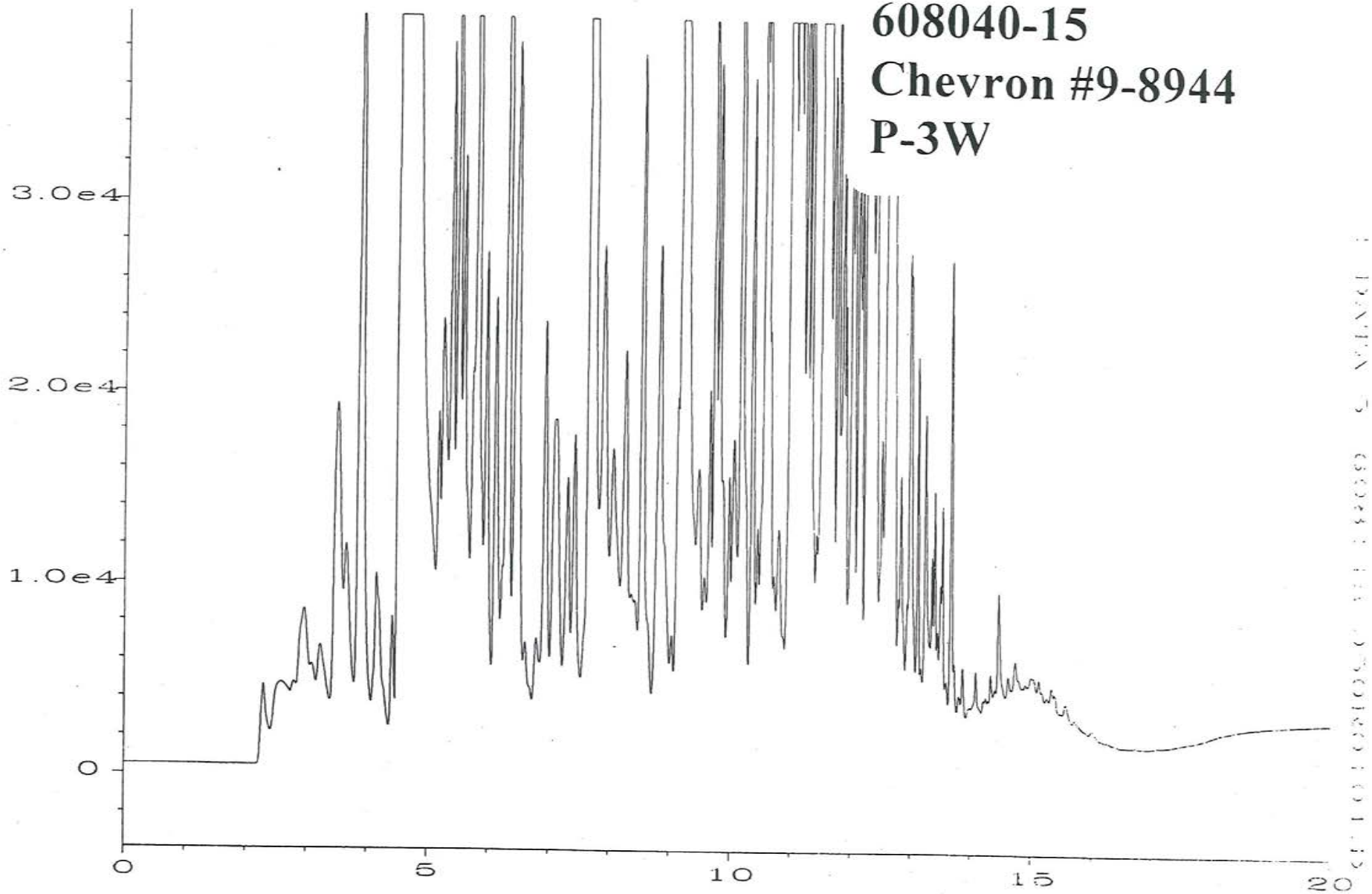
Wtph-G
608040-14
Chevron #9-8944
P-2W



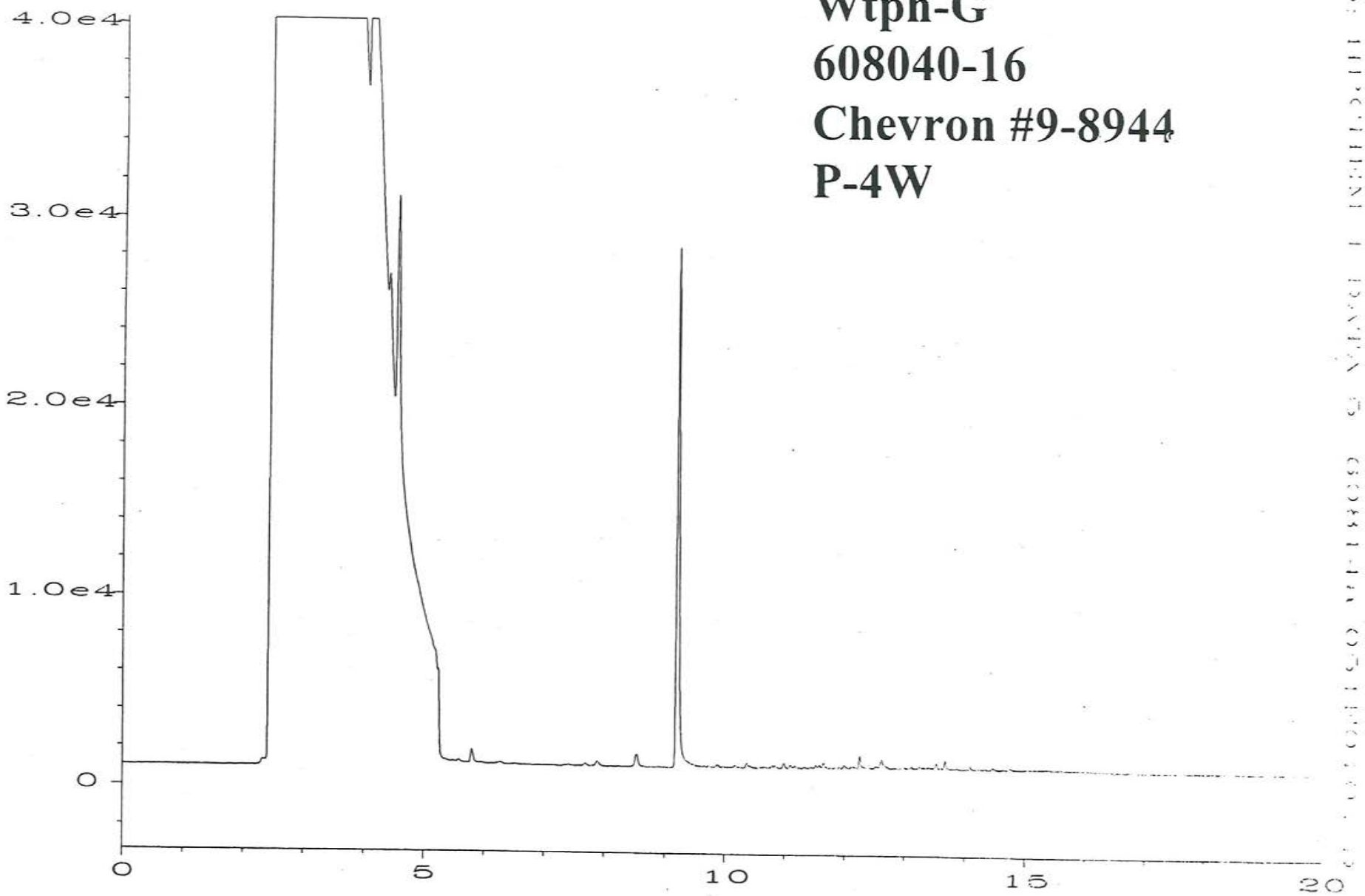

BTEX
608040-14
Chevron #9-8944
P-2W
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20


Wtph-G
608040-15
Chevron #9-8944
P-3W
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

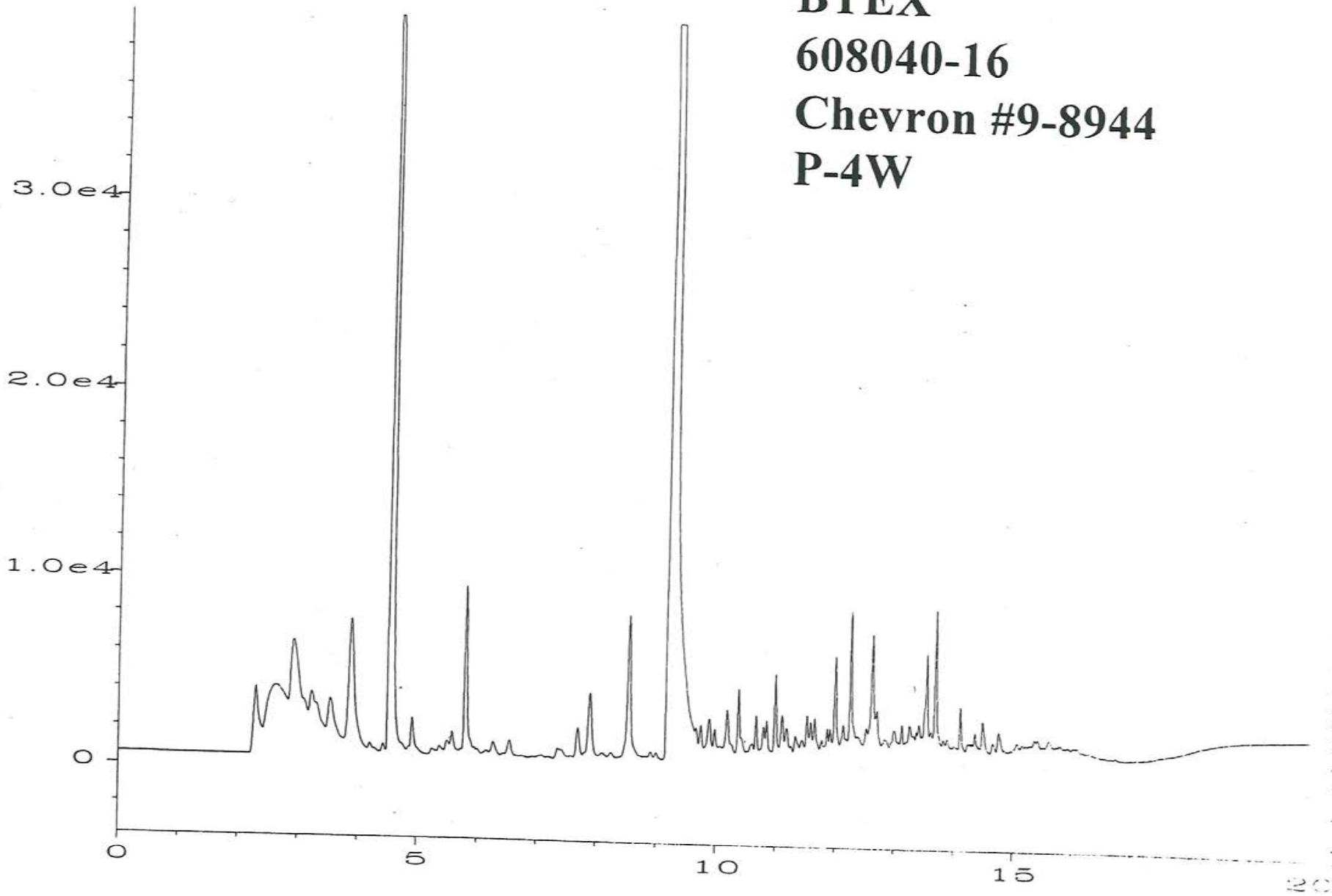
BTEX
608040-15
Chevron #9-8944
P-3W



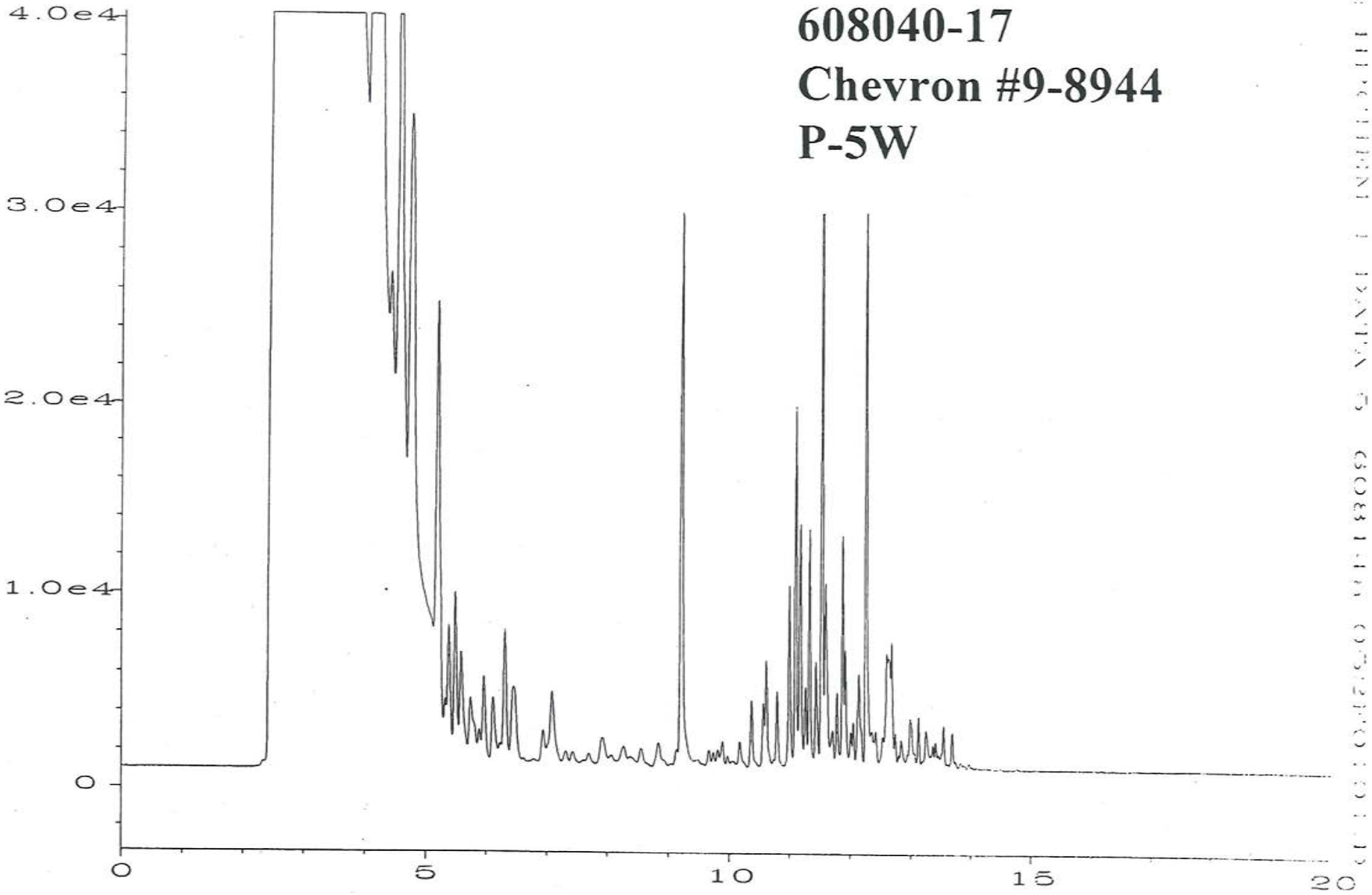
Wtph-G
608040-16
Chevron #9-8944
P-4W

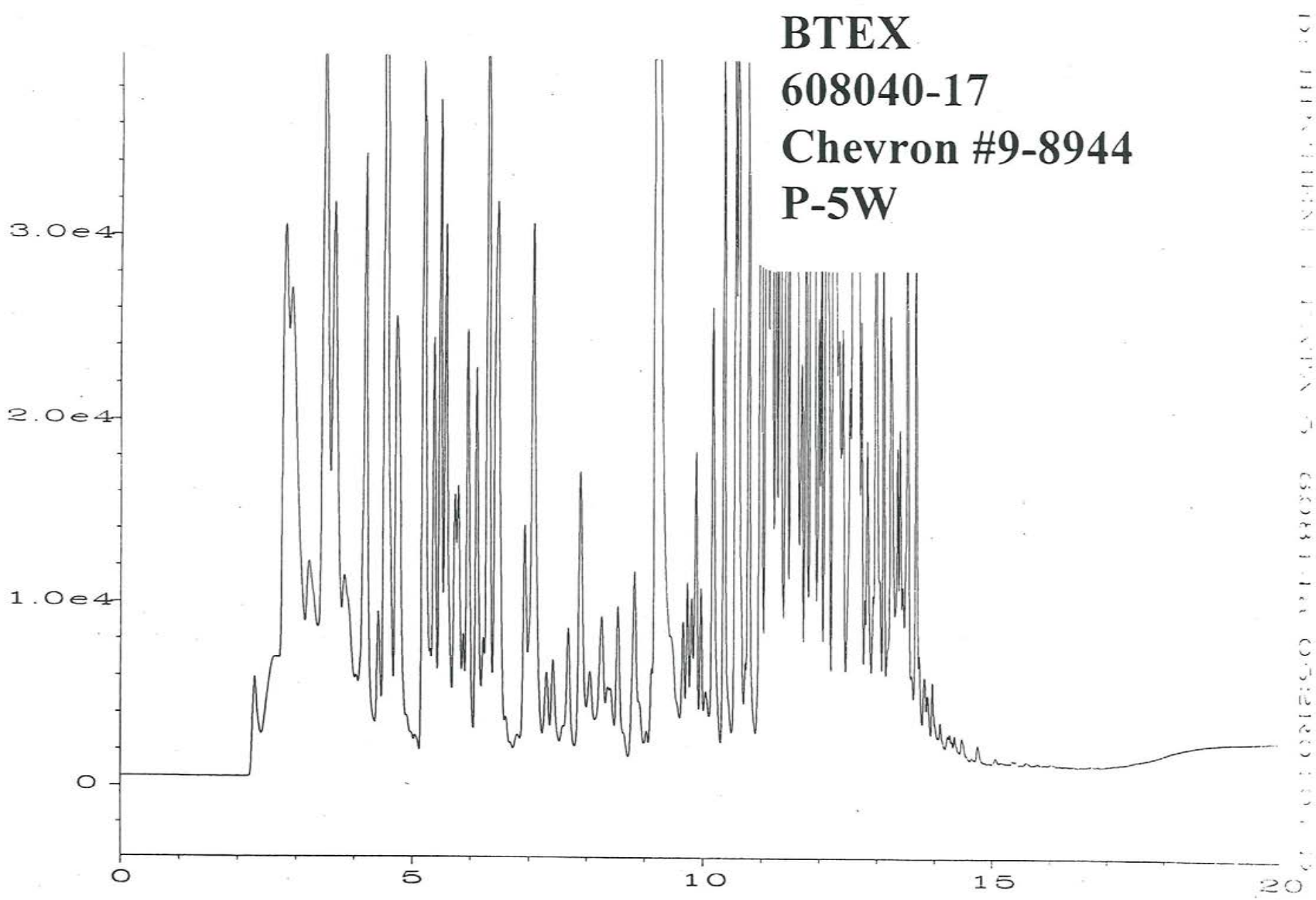


BTEX
608040-16
Chevron #9-8944
P-4W

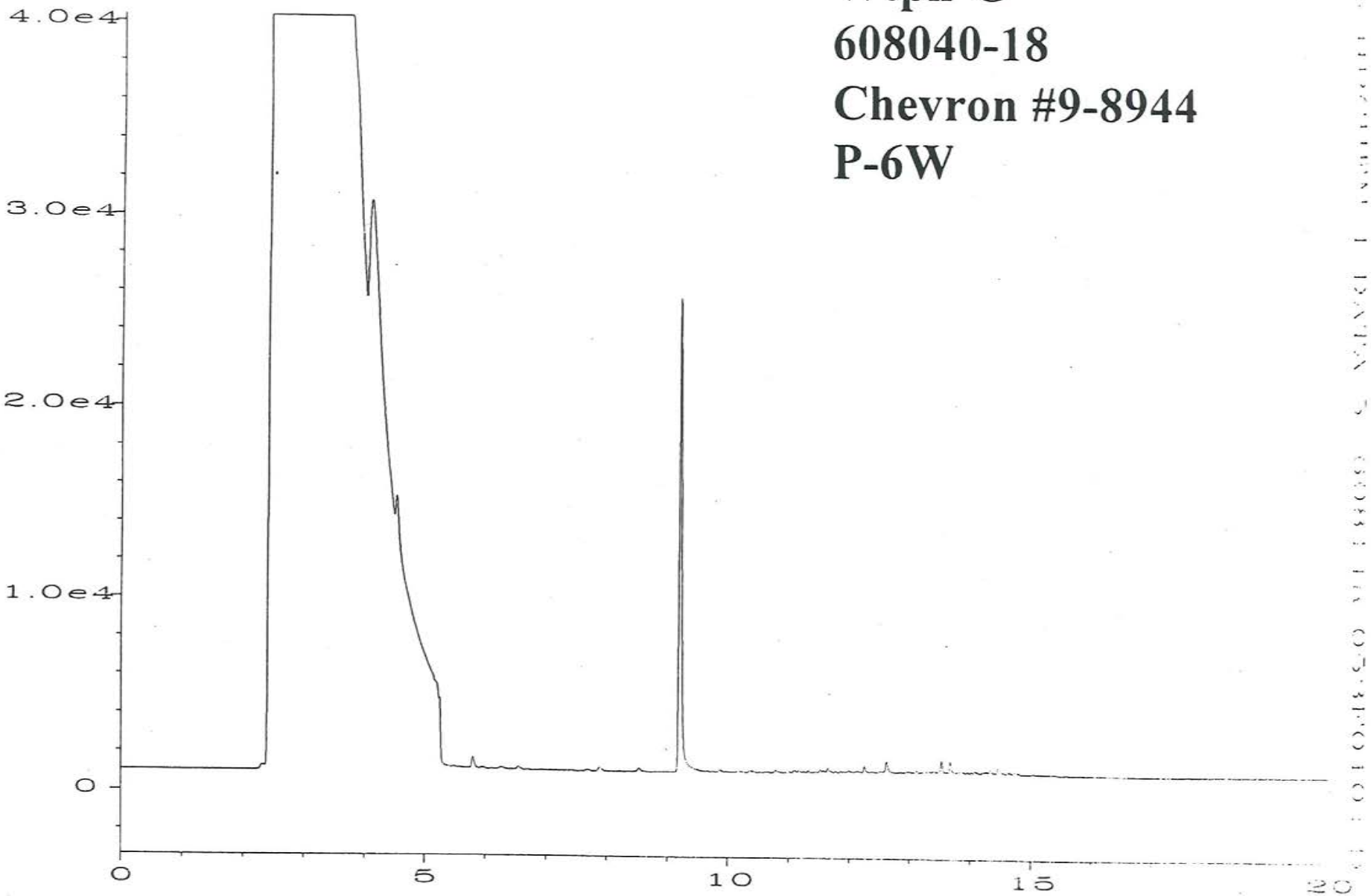


Wtph-G
608040-17
Chevron #9-8944
P-5W

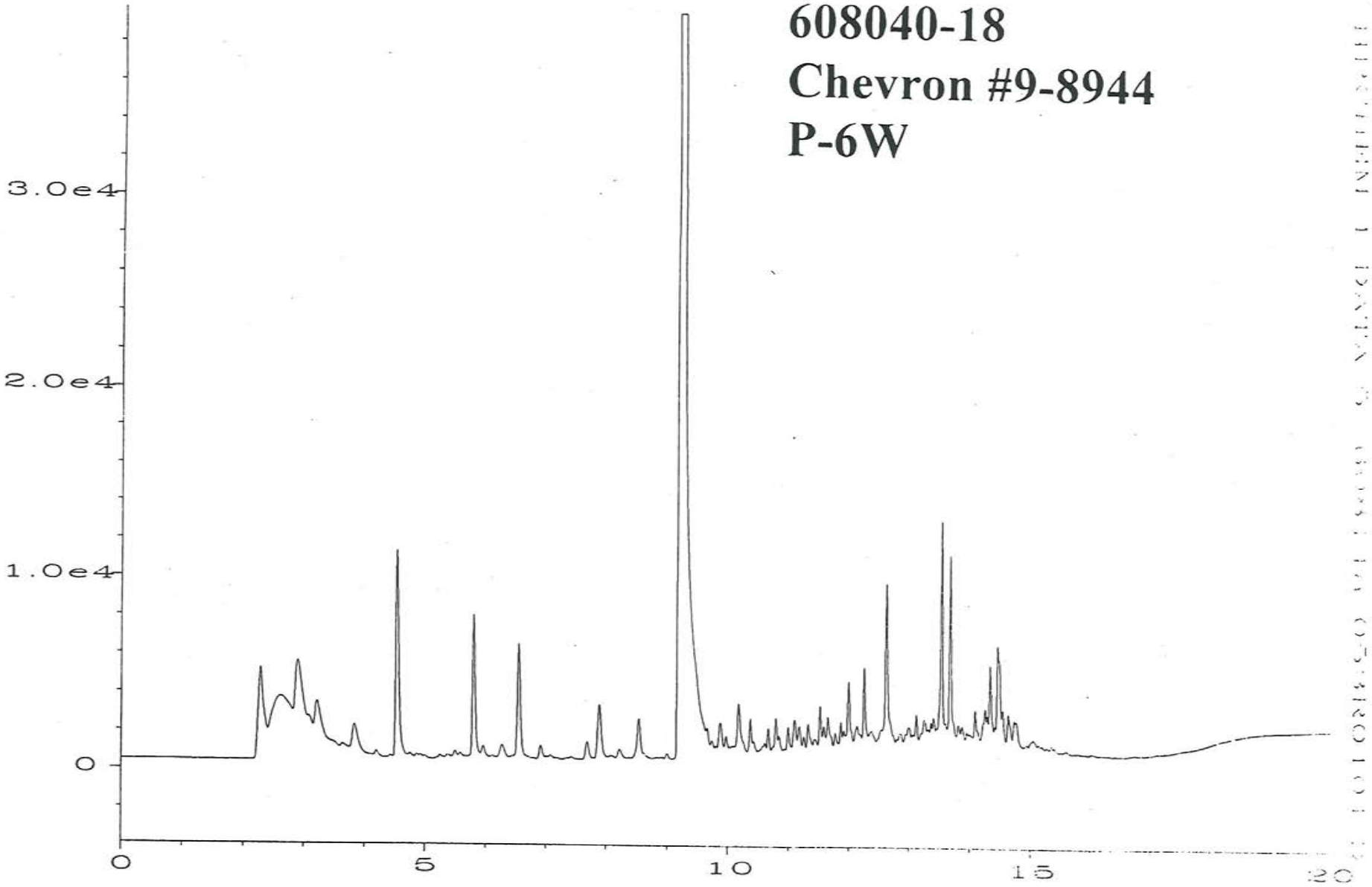



BTEX
608040-17
Chevron #9-8944
P-5W
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

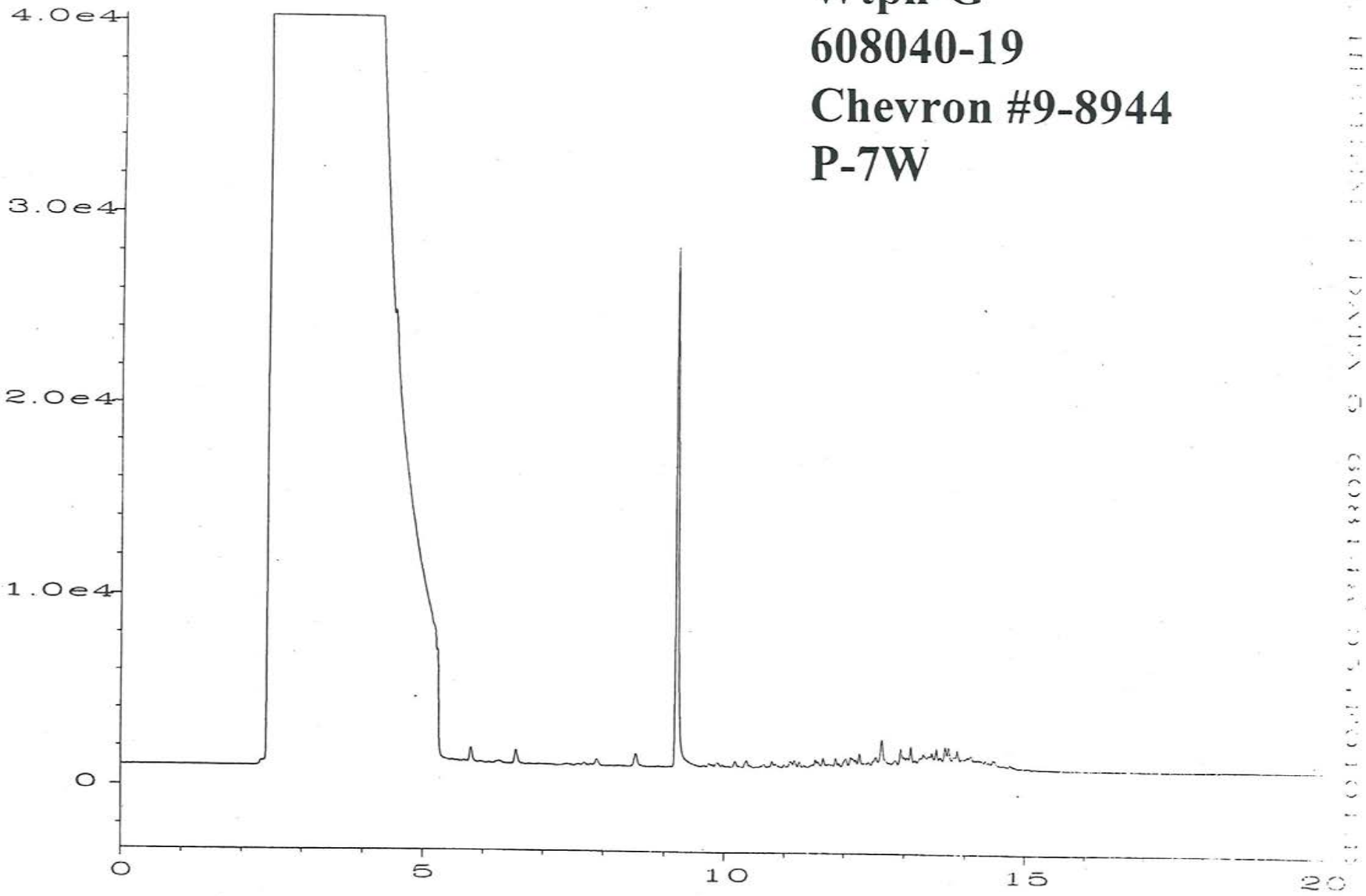
Wtph-G
608040-18
Chevron #9-8944
P-6W



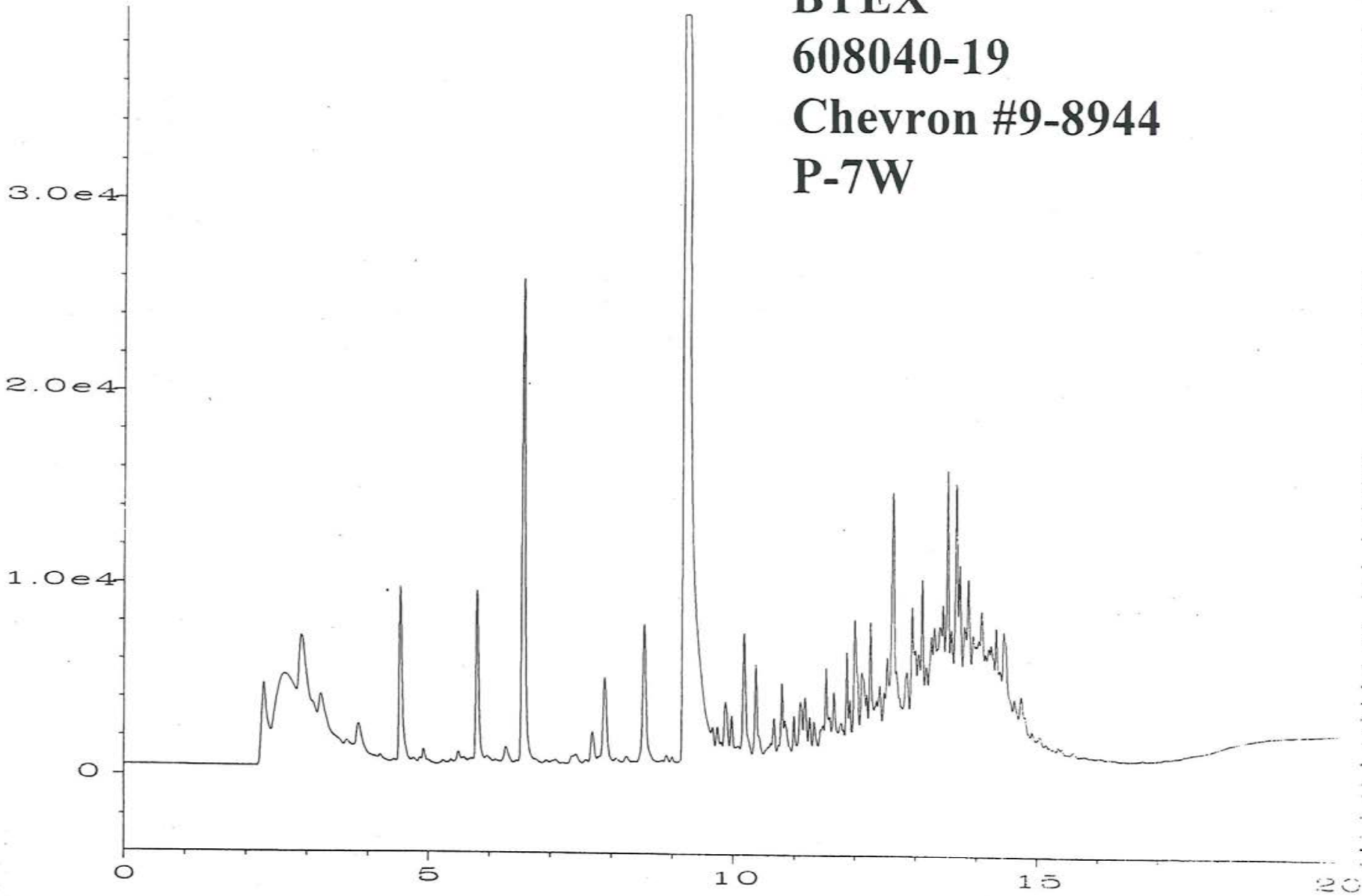
BTEX
608040-18
Chevron #9-8944
P-6W



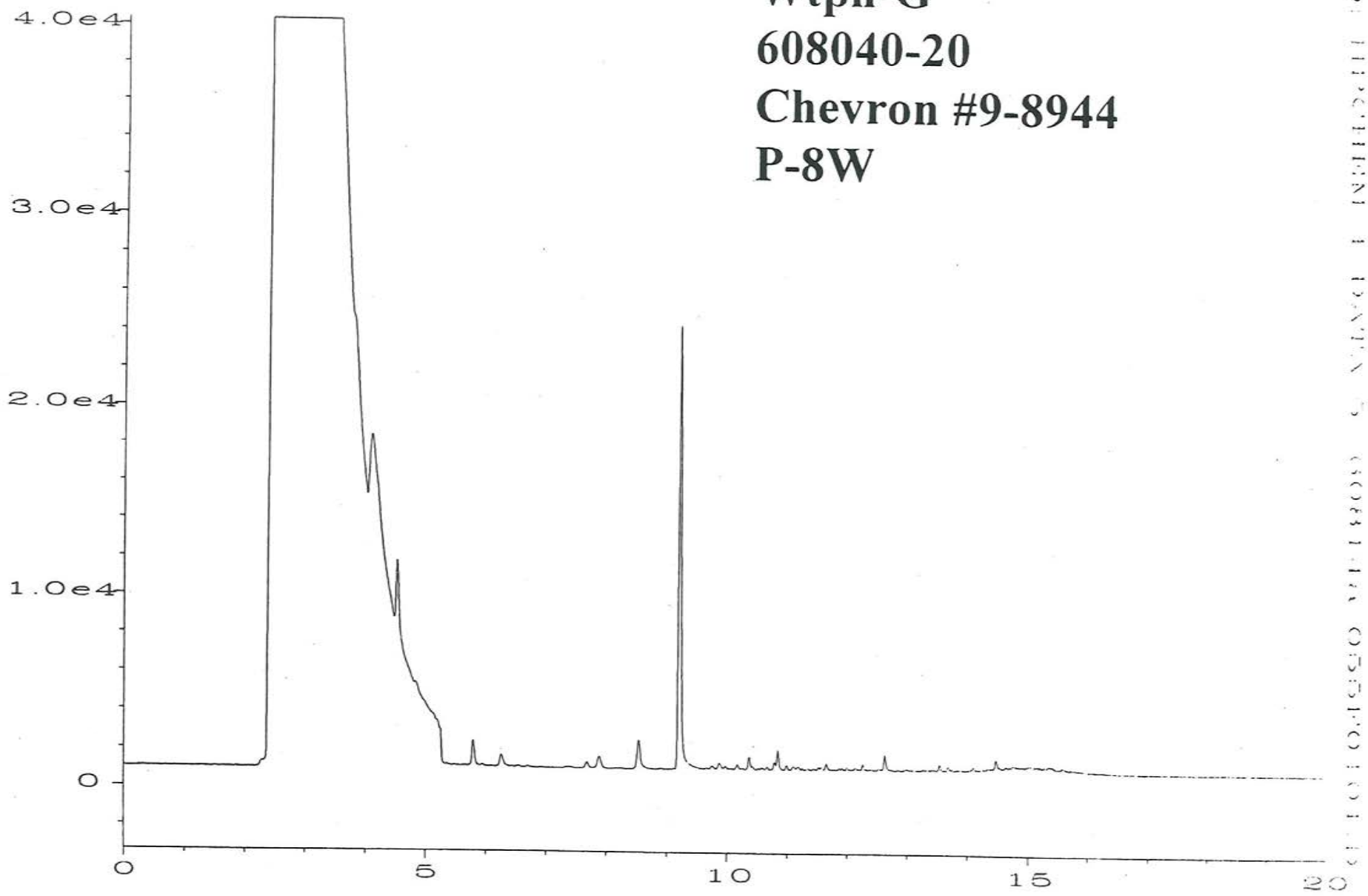
Wtph-G
608040-19
Chevron #9-8944
P-7W



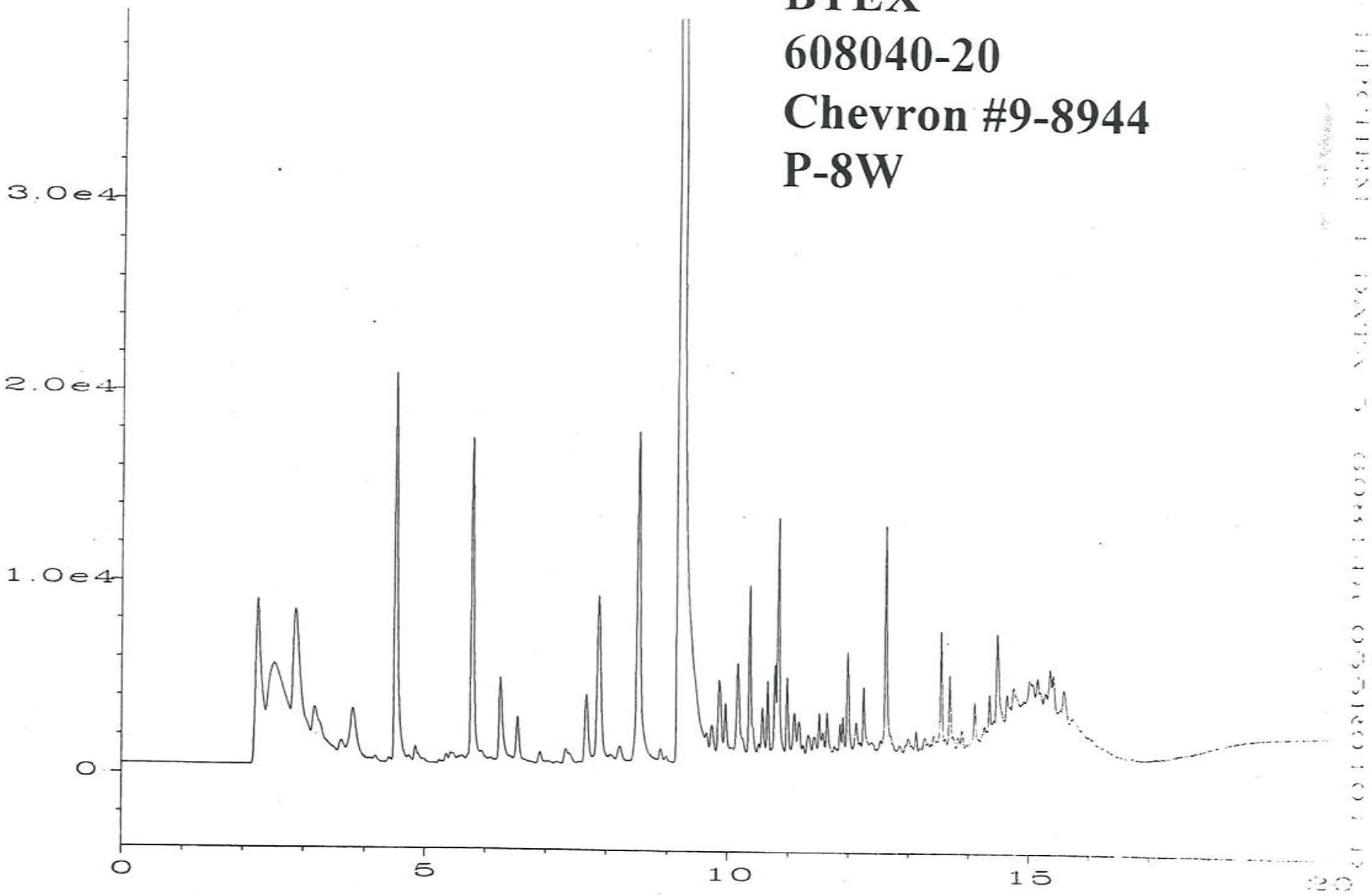
BTEX
608040-19
Chevron #9-8944
P-7W

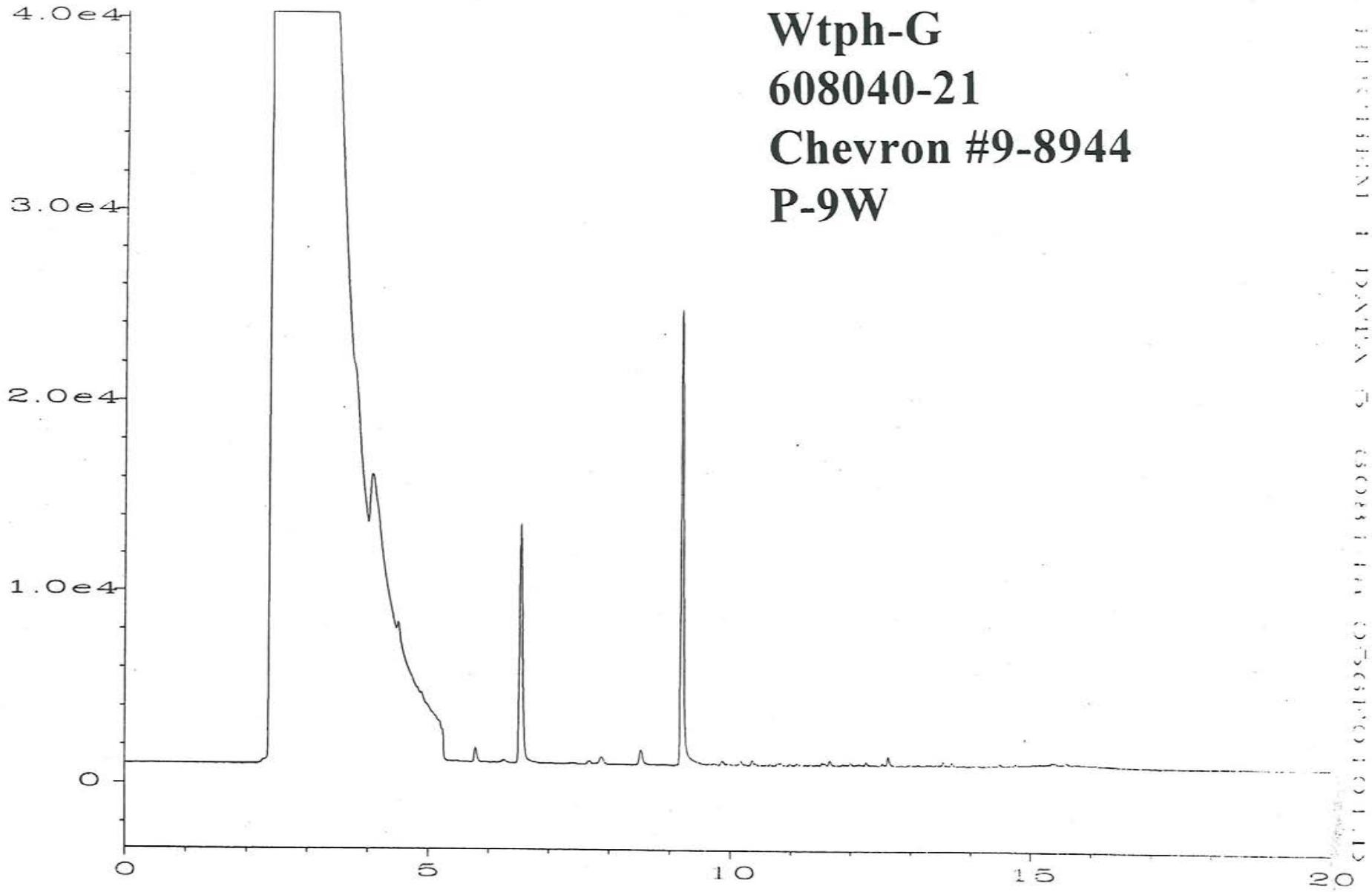


Wtph-G
608040-20
Chevron #9-8944
P-8W

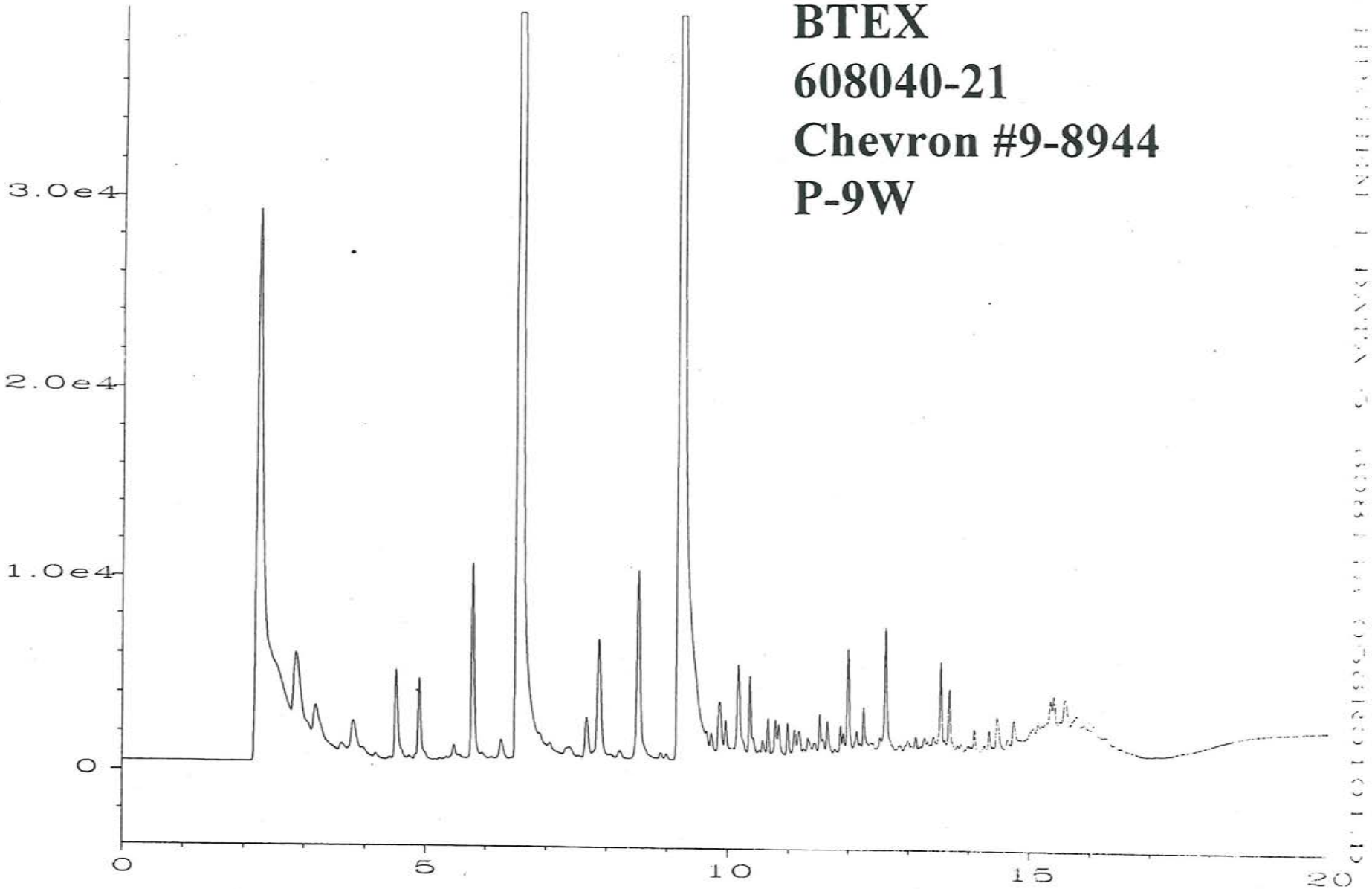


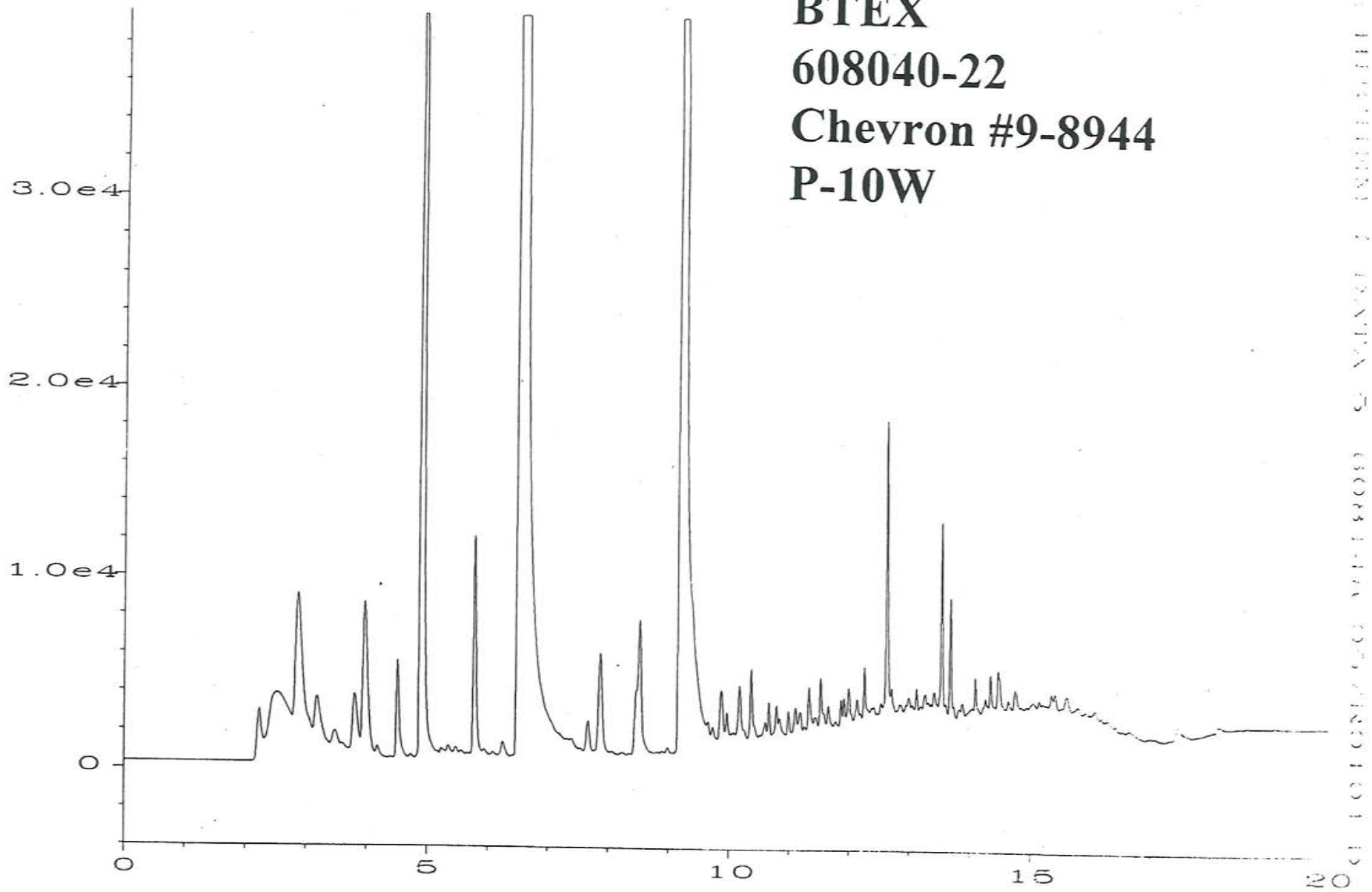
BTEX
608040-20
Chevron #9-8944
P-8W

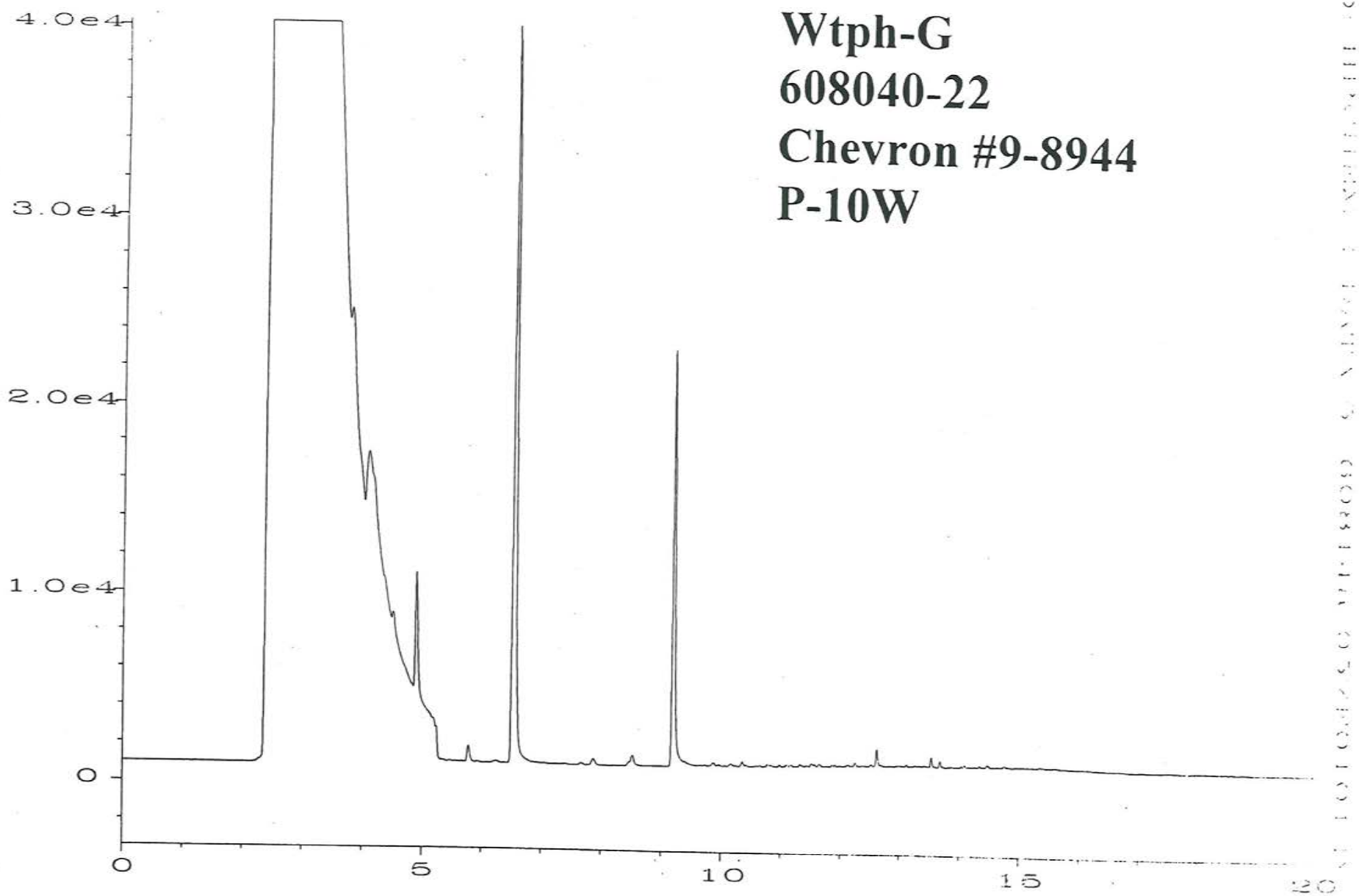




Wtph-G
608040-21
Chevron #9-8944
P-9W

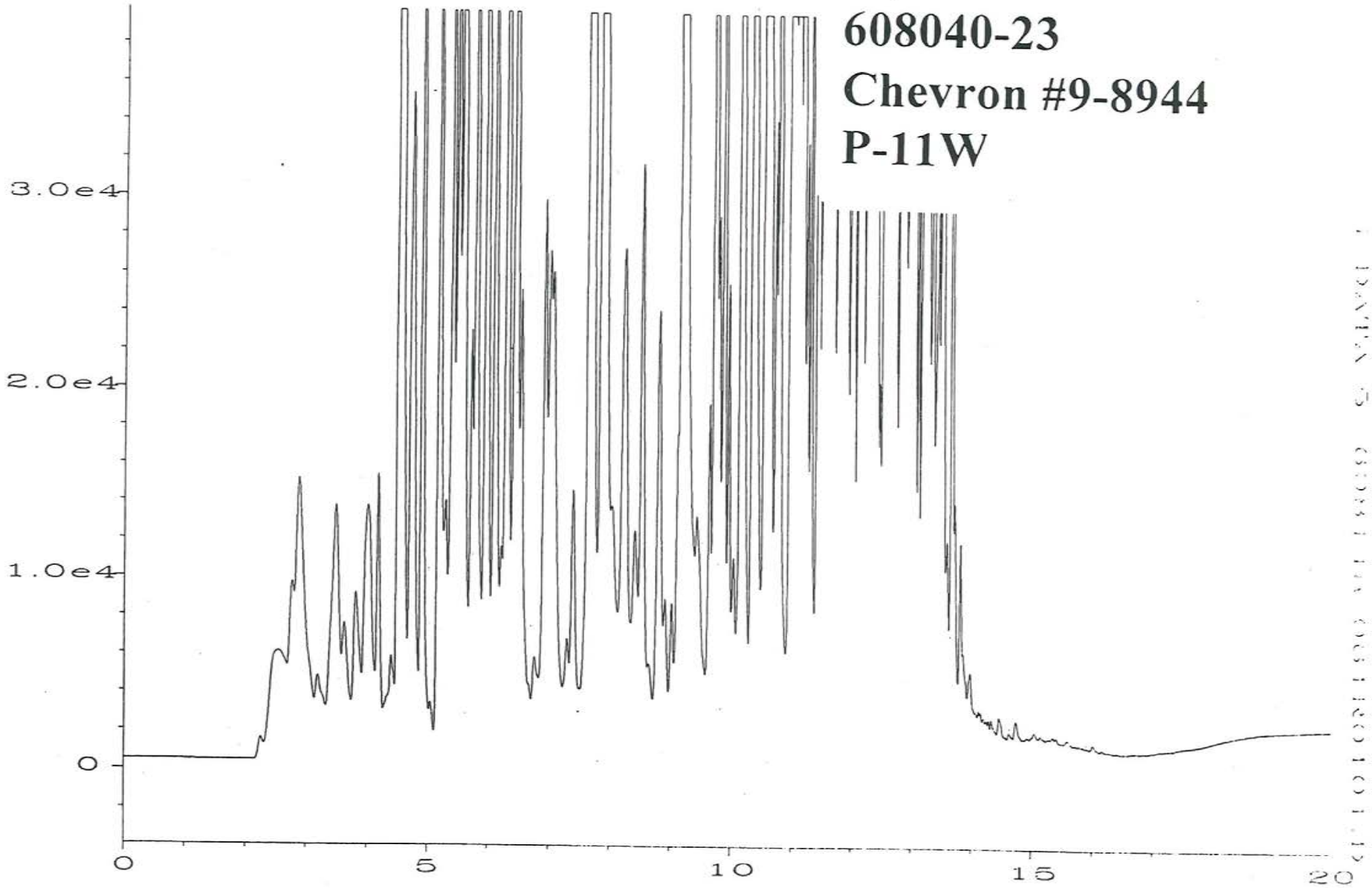

BTEX
608040-21
Chevron #9-8944
P-9W
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

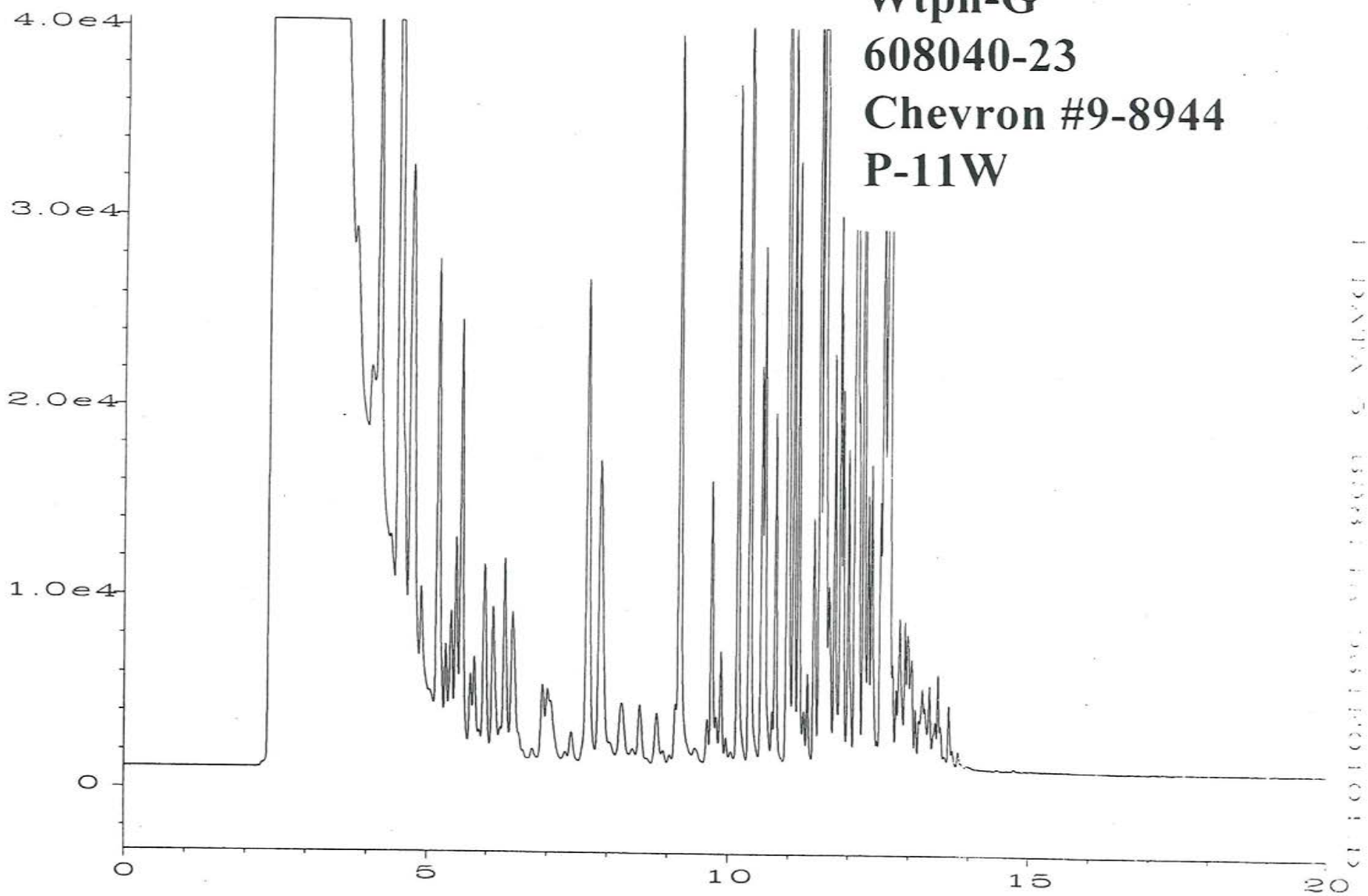

BTEX
608040-22
Chevron #9-8944
P-10W
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20



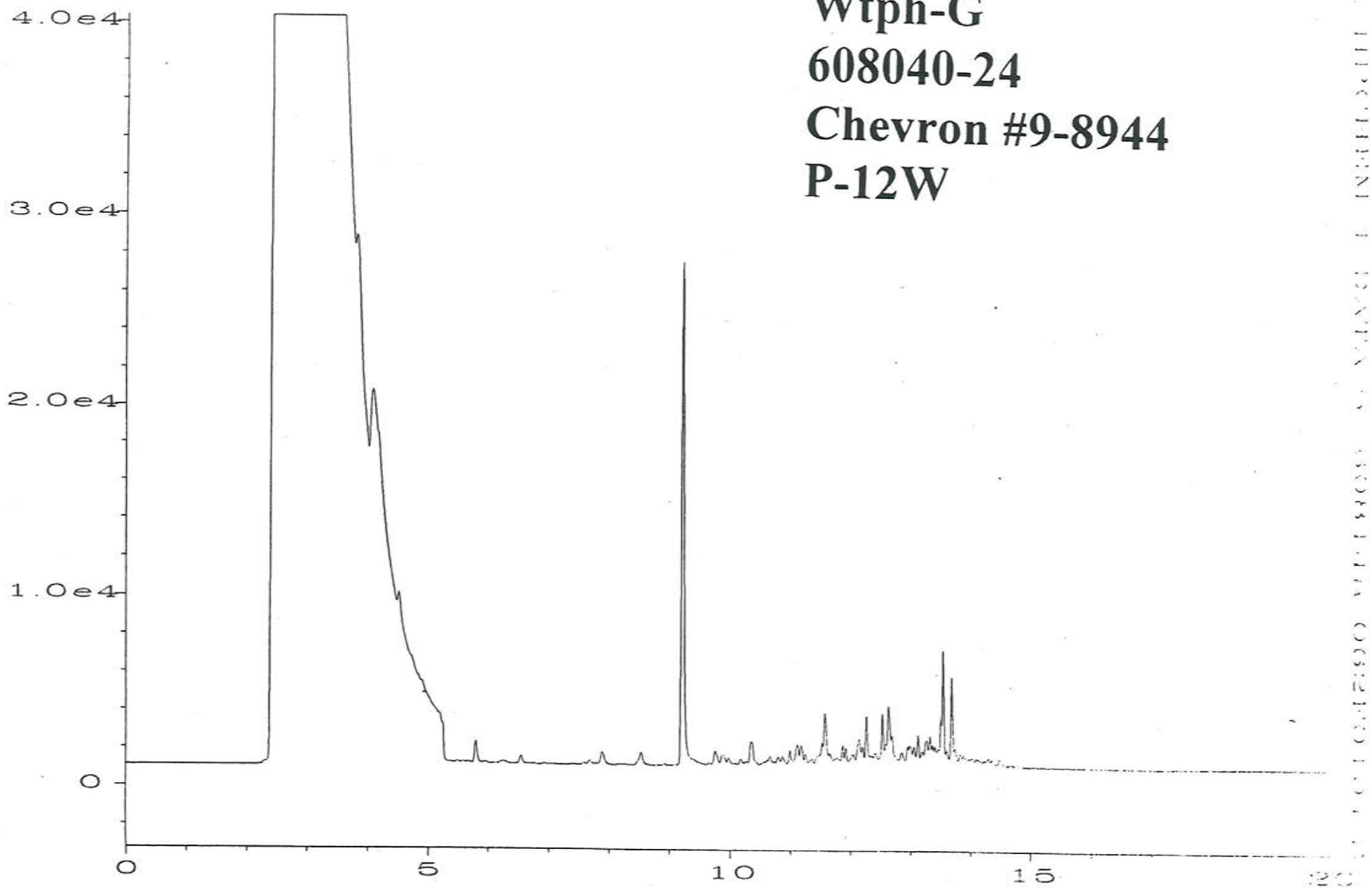
Wtph-G
608040-22
Chevron #9-8944
P-10W

BTEX
608040-23
Chevron #9-8944
P-11W




Wtph-G
608040-23
Chevron #9-8944
P-11W
4.0e4
3.0e4
2.0e4
1.0e4
0
0
5
10
15
20

Wtph-G
608040-24
Chevron #9-8944
P-12W



BTEX
608040-24
Chevron #9-8944
P-12W