NOISE MITIGATION PLAN

APPLICATION FOR:

WASHINGTON PAD

CITY OF THORNTON, COLORADO

Latitude 39.978530 Longitude -104.984248

PREPARED BY:

ENRG
The Environmental & Natural Resources Group, Inc.

AUGUST 31, 2023

IN ACCORDANCE WITH COGCC RULE 423. NOISE
ADOPTED JANUARY 15, 2021
&
Article X of Chapter 18
City of Thornton Oil and Gas Regulations
Modified August 22, 2017

Revised to include COGCC comments on
July 11, 2023

INTRODUCTION

Extraction Oil & Gas, Inc (Extraction), a wholly owned subsidiary of Civitas Resources, Inc. and The Environmental and Natural Resources Group, Inc. (ENRG) have prepared a Noise Mitigation Plan (NMP) for the Washington location. Per the Colorado Oil & Gas Conservation Commission (COGCC)'s newly adopted 400-Series Noise Ordinance, ENRG is submitting this NMP for review as part of the application process for the Washington location. This Ordinance requires oil and gas operators drilling within Colorado to submit a NMP detailing how sound regulations will be met.

SITE DESCRIPTION

The Washington Pad is located at approximately Latitude 39.978530 Longitude -104.984248 (Figure 1). According to Google Earth maps and visual observation, the proposed pad is located east of Interstate 25 and south of Northwest Parkway (E470) within the city limits of Thornton, (Adams County) Colorado (NWSE, Sec 10 T1S R68W). The City of Thornton identifies the parcels containing the Washington Pad as zoned "Planned Development" with an intended future land use designation of "Employment Center – Warehouse Overlay". The surrounding properties are primarily utilized for farming/ranching, oil and gas, and commercial or residential development. Land or properties within ¼ mile of the Washington Pad consist of relatively undisturbed uplands. The proposed well site consists of an active agricultural field.

There are three (3) residential building units (RBUs) within 2000 feet of any permanent equipment (i.e., wells, facilities) anticipated to be utilized on the Washington location. The closest RBU is approximately 1,820 feet southwest from the disturbance area. The approximate elevation at the proposed location is 5,175 feet above sea level (Figure 2). The elevation within one (1) mile of the proposed drill site ranges from 5,161 – 5,224 feet (Figure 3). The average slope from north to south (A-A') is 3.2% and west to east (B-B') is 9.5% (Figure 4).

72-HOUR AMBENT SOUND MONITORING

For the 72-hour ambient sound study, ENRG utilized two of our Noise Monitoring Terminals (NMTs) which are each equipped with a Type I Bruel & Kjaer (B&K) 2250 sound level meter. A graphical description of ENRG's continuous monitoring technology can be seen on Figure 5. At the time the NMTs were mobilized to the site, they were each calibrated, programmed for decibel (dB) readings with both "A" and "C" frequency weightings (human ear) and installed at the site by ENRG personnel. Initial and final readings were verified with a calibration device to ensure accuracy during and after the tests.

The objective was to measure and document the site's ambient sound levels. The NMTs were placed where no obstructions were allowed to block the meters from measuring and recording accurate ambient sound levels. Figures 1 and 2 show the locations where the ambient sound surveys were conducted.

72-HOUR AMBIENT SOUND RESULTS

Washington - South Ambient Sound Location

ENRG's NMT, which is equipped with a Type I Bruel & Kjaer (B&K) 2250 sound level meter, was calibrated, programmed for dBA and dBC frequencies and installed at the Washington - South ambient location by ENRG personnel before 0:00 on Thursday, March 31, 2022. Initial and final readings were verified with a calibration device to ensure accuracy during and after the test. The objective was to measure and document the site's ambient sound levels until 23:59 on Saturday, April 2, 2022. The NMT was located approximately 850 feet southeast from the edge of the proposed drilling location and approximately 2,400 feet northwest from the nearest residential building unit boundary (Figure 1). The Washington - South NMT was placed where no obstructions were allowed to block the meter from measuring and recording accurate ambient sound levels. The results of the 72-hour ambient sound levels are summarized below on Table A. A copy of the ENRG ambient study is attached as Exhibit A.

TABLE A

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTH
72-HOUR SOUND LEVEL SUMMARY - dBA & dBC

dBA DAYS	DATE	72 HR AVG (dBA)	24 HR (dBA) DAY 1	24 HR (dBA) DAY 2	24 HR (dBA) DAY 3	36 HR DAYTIME AVG (dBA) 7:00 AM - 7:00 PM	36 HR NIGHTTIME AVG (dBA) 7:00 PM - 7:00 AM
THUR - FRI - SAT	3/31 - 4/2	55.3	56.7	54.4	54.4	54.8	55.7

dBC DAYS	DATE	72 HR AVG (dBC)	24 HR (dBC) DAY 1	24 HR (dBC) DAY 2	24 HR (dBC) DAY 3	36 HR DAYTIME AVG (dBC) 7:00 AM - 7:00 PM	36 HR NIGHTTIME AVG (dBC) 7:00 PM - 7:00 AM
THUR - FRI - SAT	3/31 - 4/2	66.2	66.9	66.6	64.9	67.2	65.1

DRILLING, COMPLETIONS, AND FLOWBACK ALLOWABLES

A - Scale Allowables

As shown on Table A above, ENRG and Extraction have measured and reported a 72-hour ambient sound level of 55.3 dBA, a 36-hour daytime ambient sound level of 54.8 dBA, and a 36-hour nighttime ambient sound level of 55.7 dBA at the south location. Based on the 72-hour ambient sound level results measured at the Washington - South location from March 31 – April 2, 2022, the COGCC daytime allowable of 65.0 dBA was met 100% of the time and the 60.0 dBA nighttime allowable was met 94.4% of the time. Therefore, based on the COGCC 423.b.(2)A. regulation, the allowable for the South location will be 65.0 dBA during the day and 60.0 dBA at night as referenced in the regulation excerpt below and summarized on Table B below.

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

A. In Residential/Rural or Commercial/Agricultural, maximum permissible noise levels will be 60 db(A) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(A) in the hours between 7:00 a.m. to 7:00 p.m.;

TABLE B

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTH
ADJUSTED dBA ALLOWABLES

DAYS	DATE	72 HR AVG (dBA)	36 HR DAYTIME AVG (dBA) 7:00 AM - 7:00 PM	ADJUSTED +7 DAYTIME (dBA) ALLOWABLE (IF > 65.0 dBA)	36 HR NIGHTTIME AVG (dBA) 7:00 PM - 7:00 AM	ADJUSTED +5 NIGHTTIME (dBA) ALLOWABLE (IF > 60.0 dBA)
THUR - FRI - SAT	3/31 - 4/2	55.3	54.8	N/A	55.7	N/A

The regulations go on to state the following:

(6) *Unless otherwise required by Rule 423.b.(7), during the hours between 7:00 a.m. and the next 7:00 p.m. the maximum permissible noise levels listed in Table 423-1 may be increased 10 dB(A) for a period not to exceed 15 minutes in any 1-hour period. The increase is permissible only for a 1 - hour period during any 12 hours.*

The above regulation permits the allowable of 65 dBA during daytime hours to be increased to 75 dBA for a period of 15 minutes in any 1-hour period not to exceed a total of 60 minutes during the course of any 12 - hour daytime period.

C - Scale Allowables

As part of the COGCC Rule 423.b. requirement regarding ambient sound studies, ENRG and Extraction have measured and reported a 72-hour ambient "C" scale sound level.

The COGCC 423.b.(2)B. regulation states the following in regard to "C" weighted data:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

B. *In all zones maximum permissible noise levels will be 65 db(C) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(C) in the hours between 7:00 a.m. to 7:00 p.m.*

In situations where the dBC ambient sound levels already exceed the 423.b.(2)B. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in 423.d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

In reviewing the "C" weighted data indicated on the dBC summary Table C below, and based on the measurements obtained by ENRG during the ambient sound level survey, the 72-hour dBC average was 66.2 dBC which exceeded the 65.0 dBC allowable and therefore does not meet the COGCC's 423.b.(2)B. regulation 100% of the time. Based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 67.2 dBC, which resulted in a +7 dBC adjusted allowable of 74.2 dBC for daytime hours. Because the 36-hour nighttime ambient average was 65.1 dBC, which is above the 65.0 dBC allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington - South ambient location to 70.1 dBC. The dBC daytime and nighttime adjusted allowables are summarized below on Table C.

TABLE C

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTH
ADJUSTED dBC ALLOWABLES

DAYS	DATE	72 HR AVG (dBC)	36 HR DAYTIME AVG (dBC) 7:00 AM - 7:00 PM	ADJUSTED +7 DAYTIME (dBC) ALLOWABLE (IF > 65.0 dBC)	36 HR NIGHTTIME AVG (dBC) 7:00 PM - 7:00 AM	ADJUSTED +5 NIGHTTIME (dBC) ALLOWABLE (IF > 65.0 dBA)
THUR - FRI - SAT	3/31 - 4/2	66.2	67.2	74.2	65.1	70.1

Production Allowables

In accordance with COGCC Table 423-1, allowables during production will be as follows:

Table 423-1 – Maximum Permissible Noise Levels LAND USE DESIGNATION	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/ Rural/State Parks & State Wildlife Areas	55 db(A)	50 db(A)
Commercial/Agricultural	60 db(A)	55 db(A)
Light Industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)
All Zones	60 db(C)	60 db(C)

Because the Washington location is located in a "Planned Development" with an intended future land use designation of "Employment Center – Warehouse Overlay" zone, ENRG is suggesting that the allowables pursuant to the Table above are Industrial.

Pursuant to 423.d.(2), allowables may be adjusted if the ambient sound level already exceeds the land use designation in Table 423-1 above.

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations*

Although the above regulation typically allows for ambient + 7 dBA during the day and + 5 dBA at night when ambient levels exceed the allowables in Table 423-1, there is a limit for which the decibel levels can be increased, described in 423.d.(3) and Table 423-2. Regulation 423.d.(3) states the following with regard to maximum cumulative sound levels after the commencement of production:

> ***(3)*** *After the Commencement of Production Operations, if ambient noise levels already exceed the maximum permissible noise thresholds identified in Table 423-1, under no circumstances will new Oil and Gas Operations or a significant modification to an existing Oil and Gas Operations raise cumulative ambient noise above:*

Table 423-2 – Maximum Cumulative Noise Levels LAND USE DESIGNATION	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/ Rural/State Parks & State Wildlife Areas	65 db(A)	60 db(A)
Commercial/Agricultural	70 db(A)	65 db(A)
Light Industrial	80 db(A)	75 db(A)
Industrial	90 db(A)	85 db(A)
All Zones	75 db(C)	70 db(C)

A - Scale Allowables - Production

During the ambient sound level survey at the Washington - South location, the 36-hour daytime average was 54.8 dBA during the day, while the 36-hour nighttime average was 55.7 dBA. Because the daytime ambient sound level was 54.8 dBA and did not exceed the 80 dBA allowable pursuant to Table 423-1, no adjustment is being recommended at this time. Similarly, because the nighttime ambient sound level was 55.7 dBA and therefore did not exceed the allowable of 75.0 dBA dBA, no adjustment is being recommended at this time.

C - Scale Allowables - Production

During the ambient sound level survey at the Washington - South location, the 36-hour daytime average was 67.2 dBC during the day, while the 36-hour nighttime average was 65.1 dBC. Because the daytime average of 67.2 dBC exceeds the allowable set forth in Table 423-1, ENRG is suggesting an increase in the allowable to 74.2 dBC (67.2 + 7= 74.2) during daytime hours. Because the nighttime average of 65.1 dBC with an adjustment of + 5 dBA would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (65.1 + 5 = 70.1), the allowable during production will be capped at 70.0 dBC during the night.

Washington - Southwest Ambient Sound Location

As previously discussed, ENRG's NMT, which is equipped with a Type I Bruel & Kjaer (B&K) 2250 sound level meter, was calibrated, programmed for dBA and dBC frequencies and installed at the Washington - Southwest ambient location by ENRG personnel before 0:00 on Thursday, March 31, 2022. Initial and final readings were verified with a calibration device to ensure accuracy during and after the test. The objective was to measure and document the site's ambient sound levels until 23:59 on Saturday, April 2, 2022. The NMT was located approximately 1,450 feet southwest from the edge of the proposed drilling location and approximately 650 feet northeast from the nearest residential building unit boundary (Figure 1). The Washington - Southwest NMT was placed where no

obstructions were allowed to block the meter from measuring and recording accurate ambient sound levels. The results of the 72-hour ambient sound levels are summarized below on Table D. A copy of the ENRG ambient study is attached as Exhibit A.

TABLE D

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTHWEST
72-HOUR SOUND LEVEL SUMMARY - dBA & dBC

dBA DAYS	DATE	72 HR AVG (dBA)	24 HR (dBA) DAY 1	24 HR (dBA) DAY 2	24 HR (dBA) DAY 3	36 HR DAYTIME AVG (dBA) 7:00 AM - 7:00 PM	36 HR NIGHTTIME AVG (dBA) 7:00 PM - 7:00 AM
THUR - FRI - SAT	3/31 - 4/2	65.4	65.6	66.3	63.8	66.3	64.2

dBC DAYS	DATE	72 HR AVG (dBC)	24 HR (dBC) DAY 1	24 HR (dBC) DAY 2	24 HR (dBC) DAY 3	36 HR DAYTIME AVG (dBC) 7:00 AM - 7:00 PM	36 HR NIGHTTIME AVG (dBC) 7:00 PM - 7:00 AM
THUR - FRI - SAT	3/31 - 4/2	73.0	73.2	73.8	71.7	74.3	71.3

DRILLING, COMPLETIONS, AND FLOWBACK SOUND ALLOWABLES

A - Scale Allowables

As shown on Table D above, and in reference to the Washington - Southwest location, ENRG and Extraction have measured and reported a 72-hour ambient sound level of 65.4 dBA, a 36-hour daytime ambient sound level of 66.3 dBA, and a 36-hour nighttime ambient sound level of 64.2 dBA. The COGCC regulation 423.b.(2)A states the following with regard to dBA allowables:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

A. *In Residential/Rural or Commercial/Agricultural, maximum permissible noise levels will be 60 db(A) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(A) in the hours between 7:00 a.m. to 7:00 p.m.;*

In reviewing the "A" weighted data indicated on Table D, and based on the measurements obtained by ENRG during the 72-hour ambient sound level survey, approximately 22 hours (61.1% of the time) exceeded the 65.0 dBA daytime allowable and approximately 27 hours (75.0% of the time) exceeded the 60.0 dBA nighttime allowable and therefore do not meet the COGCC's 423.b.(2)A. regulation 100% of the time.

In situations where the dBA ambient sound levels already exceed the 423.b.(2)A. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in 423.d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

As discussed, and referenced in the regulation excerpt above, based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 66.3 dBA, which resulted in an +7 dBA adjusted allowable of 73.3 dBA (66.3 + 7) for daytime hours. Further, it is ENRG's opinion based on the results of the ambient study that the COGCC daytime adjusted allowable of 73.3 dBA was met 100% (36 hours) of the time. Because the 36-hour nighttime ambient average was 64.2 dBA, which is above the 60.0 dBA allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington - Southwest location to 69.2 dBA (64.2 + 5). It is ENRG's opinion based on the results of the ambient study that the COGCC nighttime adjusted allowable of 69.2 dBA was met 100% (36 hours) of the time. The adjusted daytime and nighttime dBA allowables are shown on below on Table E.

TABLE E

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTHWEST
ADJUSTED dBA ALLOWABLES

DAYS	DATE	72 HR AVG (dBA)	36 HR DAYTIME AVG (dBA) 7:00 AM - 7:00 PM	ADJUSTED +7 DAYTIME (dBA) ALLOWABLE (IF > 65.0 dBA)	36 HR NIGHTTIME AVG (dBA) 7:00 PM - 7:00 AM	ADJUSTED +5 NIGHTTIME (dBA) ALLOWABLE (IF > 60.0 dBA)
THUR - FRI - SAT	3/31 - 4/2	65.4	66.3	73.3	64.2	69.2

The regulations go on to state the following:

> ***(6)*** *Unless otherwise required by Rule 423.b.(7), during the hours between 7:00 a.m. and the next 7:00 p.m. the maximum permissible noise levels listed in Table 423-1 may be increased 10 dB(A) for a period not to exceed 15 minutes in any 1-hour period. The increase is permissible only for a 1-hour period during any 12 hours.*

The above regulation permits the allowable of 73.3 dBA during daytime hours to be increased to 83.3 dBA for a period of 15 minutes in any 1-hour period not to exceed a total of 60 minutes during the course of any 12-hour daytime period.

C - Scale Allowables

As part of the COGCC Rule 423.b. requirement regarding ambient sound studies, ENRG and Extraction have measured and reported a 72-hour ambient "C" scale sound level.

The COGCC 423.b.(2)B. regulation states the following in regard to "C" weighted data:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

B. *In all zones maximum permissible noise levels will be 65 db(C) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(C) in the hours between 7:00 a.m. to 7:00 p.m.*

In situations where the dBC ambient sound levels already exceed the 423.b.(2)B. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in 423.d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

In reviewing the "C" weighted ambient data and based on the measurements obtained by ENRG during the 72-hour ambient sound level survey, approximately 72 hours (100% of the time) exceeded the 65.0 dBC allowable and therefore do not meet the COGCC's 423.b.(2)B. regulation 100% of the time. As shown on Table F below, ENRG and Extraction have measured and reported a 72-hour ambient sound level of 73.0 dBC, a 36-hour daytime ambient sound level of 74.3 dBC, and a 36-hour nighttime ambient sound level of 71.3 dBC.

Based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 74.3 dBC, which resulted in an +7 dBC adjusted allowable of 81.3 dBC (74.3 + 7) for daytime hours. Further, it is ENRG's opinion based on the results of the ambient study that the COGCC daytime adjusted allowable of 81.3 dBC was met 100% (36 hours) of the time. Because the 36-hour nighttime ambient average was 71.3 dBC, which is above the 65.0 dBC allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington - Southwest location to 76.3 dBC (71.3 + 5). It is ENRG's opinion based on the results of the ambient

study that the COGCC nighttime adjusted allowable of 76.3 dBC was met 100% (36 hours) of the time. The adjusted daytime and nighttime dBC allowables are shown on Table F below.

TABLE F

EXTRACTION OIL & GAS, INC.
WASHINGTON - SOUTHWEST
ADJUSTED dBC ALLOWABLES

DAYS	DATE	72 HR AVG (dBC)	36 HR DAYTIME AVG (dBC) 7:00 AM - 7:00 PM	ADJUSTED +7 DAYTIME (dBC) ALLOWABLE (IF > 65.0 dBC)	36 HR NIGHTTIME AVG (dBA) 7:00 PM - 7:00 AM	ADJUSTED +5 NIGHTTIME (dBA) ALLOWABLE (IF > 65.0 dBA)
THUR - FRI - SAT	3/31 - 4/2	73.0	74.3	81.3	71.3	76.3

Production Allowables

In accordance with COGCC Table 423-1, allowables during production will be as follows:

Table 423-1 – Maximum Permissible Noise Levels LAND USE DESIGNATION	7:00 am to next 7:00 pm	7:00 pm to next 7:00 am
Residential/ Rural/State Parks & State Wildlife Areas	55 db(A)	50 db(A)
Commercial/Agricultural	60 db(A)	55 db(A)
Light Industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)
All Zones	60 db(C)	60 db(C)

Because the Washington location is located in a "Planned Development" with an intended future land use designation of "Employment Center – Warehouse Overlay" zone, ENRG is suggesting that the allowables pursuant to the Table above are Industrial.

Pursuant to 423.d.(2), allowables may be adjusted if the ambient sound level already exceeds the land use designation in Table 423-1 above.

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations*

Although the above regulation typically allows for ambient + 7 dBA during the day and + 5 dBA at night when ambient levels exceed the allowables in Table 423-1, there is a limit for which the decibel levels can be increased, described in 423.d.(3) and Table 423-2. Regulation 423.d.(3) states the following with regard to maximum cumulative sound levels after the commencement of production:

> ***(3)*** *After the Commencement of Production Operations, if ambient noise levels already exceed the maximum permissible noise thresholds identified in Table 423-1, under no circumstances will new Oil and Gas Operations or a significant modification to an existing Oil and Gas Operations raise cumulative ambient noise above:*

Table 423-2 – Maximum Cumulative Noise Levels LAND USE DESIGNATION	**7:00 am to next 7:00 pm**	**7:00 pm to next 7:00 am**
Residential/ Rural/State Parks & State Wildlife Areas	65 db(A)	60 db(A)
Commercial/Agricultural	70 db(A)	65 db(A)
Light Industrial	80 db(A)	75 db(A)
Industrial	90 db(A)	85 db(A)
All Zones	75 db(C)	70 db(C)

A - Scale Allowables - Production

During the ambient sound level survey at the Washington - Southwest location, the 36-hour daytime average was 66.3 dBA during the day, while the 36-hour nighttime average was 64.2 dBA. Because the daytime ambient sound level was 66.3 dBA and did not exceed the 80 dBA allowable pursuant to Table 423-1, no adjustment is being recommended at this time. Similarly, because the nighttime ambient sound level was 66.3 dBA and therefore did not exceed the allowable of 75.0 dBA dBA, no adjustment is being recommended at this time.

C - Scale Allowables - Production

During the ambient sound level survey at the Washington - Southwest location, the 36-hour daytime average was 74.3 dBC during the day, while the 36-hour nighttime average was 71.3 dBC. Because the nighttime average of 74.3 dBC with an adjustment of + 7 dBA would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (74.3 + 7 = 81.3), the allowable during production will be capped at 75.0 dBC during the day. Similarly, because the nighttime ambient average of 71.3 with an adjustment of +5 would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (71.3 + 5 + 76.3), the allowable will be capped at 70.0 dBC for nighttime hours.

SOUND MITIGATION OPTIONS

Sound mitigation requirements and Best Management Practices (BMPs) used to reduce the amount of sound emitted beyond the Extraction oil and gas operations lease boundary can be managed in

numerous ways, both on behalf of the operator, as well as contractors performing work on-site. See Exhibit B for a list of BMPs.

SOUND FROM DRILLING & COMPLETIONS OPERATIONS

Figures 6, 7 & 8 show the layout of the drilling through flowback operations stages. Table 1.1 and Table 1.2 indicate typical sound levels generated during construction, oil and gas drilling, and completions operations.

ENGINE SOUND

Some engines can operate at a constant number of revolutions per minute (RPM), which reduces the often annoying, fluctuating sound caused by engines that speed up and slow down. Mufflers, like those used for automobile engines, can be used to minimize engine sound.

COMPRESSOR SOUND

Sound from compressors can be mitigated most effectively by treating each significant sound source: gas turbines or engines, compressors, exhaust outlets and air inlets, and cooling and ventilation fans. Abatement may involve changing the blades on fans, which can change the frequency of sound emitted, thereby removing the annoying tones. Engine sounds can be muffled using automotive-type mufflers, or by housing the engines in acoustically insulated structures. The entire compressor can also be housed in an acoustically insulated building.

SOUND MITIGATION MEASURES

Sound mitigation measures to be utilized during the various stages of the Washington location include the following:

- The construction phase is scheduled to last, at this time, approximately 12 weeks.
- Sound walls will be provided by a third-party vendor. A 32’ tall, STC – 32 rated acoustic paneled, engineered sound wall, or similar, will be utilized.
- At the time of this NMP, Patterson 345 is scheduled to be utilized for the drilling of the Washington location. Patterson 345 will be equipped with highline power, instead of Tier II diesel engines, for use at the Washington location. Rigs have been designed and equipped with sound mitigating equipment including devices to minimize squeaking from the draw works brakes. The drill phase is scheduled to last, at this time, for approximately 8 weeks.
- A quiet “hydraulic fracturing (frac)” fleet will be used during the completion phase. The frac is scheduled, at this time, to last for approximately 13 weeks.
- Flowback is scheduled to last, at this time, approximately 60 days.

- The production phase is scheduled to last, at this time, approximately 30 years.

SOUND MODELING

By modeling with existing sound signatures emitted from equipment similar to that which will be utilized on a location, designs for sound wall placement can be recommended and tested for efficiency. This also allows ambient levels to be taken in to consideration when determining allowable sound levels for oil and gas operations. ENRG utilized the EMS Bruel and Kjaer V2022 Predictor - LimA software with sound signatures from the Patterson Rig 346 drilling rig and the Liberty Quiet Fleet for the models provided. ENRG has modeled the drilling, completions, flowback, and production phases of the Washington Pad with-out mitigation as indicated on Figures 9 - 16.

- Figure 9 presents anticipated dBA drilling un-mitigated sound levels
- Figure 10 presents anticipated dBA completions un-mitigated sound levels
- Figure 11 presents anticipated dBA flowback un-mitigation sound levels
- Figure 12 presents anticipated dBA production un-mitigated sound levels
- Figure 13 presents anticipated dBC drilling un-mitigated sound levels
- Figure 14 presents anticipated dBC completions un-mitigated sound levels
- Figure 15 presents anticipated dBC flowback un-mitigated sound levels
- Figure 16 presents anticipated dBC production un-mitigated sound levels

There are three (3) RBUs within 2000 feet of any permanent equipment (i.e., wells, facilities) anticipated to be utilized on the Washington location. There is a RBU approximately 1,820 feet to the southwest from the edge of the proposed location. Additionally, there is a new commercial/industrial development approximately 3,500 feet to the south. Figure 17 indicates the proposed sound wall and the design which was used to complete the mitigation portion of the modeling. ENRG has modeled the drilling, completions, and flowback phases of the Washington pad site with mitigation as indicated on Figures 18 - 23.

- Figure 17 presents the proposed sound wall for the Washington location
- Figure 18 presents anticipated dBA drilling mitigated sound levels
- Figure 19 presents anticipated dBA completions mitigated sound levels
- Figure 20 presents anticipated dBA flowback mitigated sound levels
- Figure 21 presents anticipated dBC drilling mitigated sound levels
- Figure 22 presents anticipated dBC completions mitigated sound levels
- Figure 23 presents anticipated dBC flowback mitigated sound levels

LOCAL GOVERNMENT REGULATIONS & REQUIREMENTS

The proposed Washington Pad is located within the city limits of Thornton, Colorado. According to the City of Thornton Ordinance Chapter 18, Division 2, Section 18-870(3), a Noise Management Plan must be submitted as part of the application process. The Ordinance goes on to state the following with regard to allowable sound levels:

The plan shall include proposed mitigation measures and a requirement that all decibel readings to verify compliance with these regulations shall be taken for each well site and production site in the manner prescribed in COGCC Rule 802.c.

Since the adoption of the City of Thornton Ordinance on August 22, 2017 cited above, the COGCC has passed a new series of Rules governing sound level allowables. For the purpose of compliance levels for the Washington Pad, ENRG has based allowables on the new Rules and in accordance with the COGCC 400 Series regulations adopted on January 15, 2021. There is no difference in the proposed allowables between the COGCC and the City of Thornton. Please reference the Washington - South and Washington - Southwest ambient data and subsequent adjusted allowables as described below and on Tables A - F.

Allowables & Compliance

ENRG performed an ambient sound level survey in the vicinity of the proposed Washington Pad (Figure 1) from March 31 – April 2, 2022. ENRG is proposing the following allowables for dBA & dBC for drilling and completions operations at the Washington monitoring locations for the purpose of compliance within the City of Thornton:

dBA –

South

During the 72-hour sound study, the 36-hour daytime average was 54.8 dBA, while the 36-hour nighttime average was 55.7 dBA. Based on the results of the study, and COGCC 423.b.(2)A., the dBA allowable will be 65.0 dBA during the day and 60.0 dBA during the night. Taking into account the sound propagation models and the distance of the closest RBUs, it is ENRG's opinion that the City of Thornton dBA allowables will be met 100% of the time.

Southwest

During the 72-hour sound level survey, the 36-hour daytime average was 66.3 dBA, while the nighttime average was 64.2 dBA. Because both the daytime and nighttime averages exceeded the allowables as described in COGCC 423.b.(2)A. above, ENRG applied the appropriate increase pursuant to COGCC 423.d.(2). The adjusted daytime allowable is 73.3 dBA (66.3 dBA ambient + 7 dBA), while the nighttime adjusted allowable is 69.2 dBA (64.2 dBA ambient + 5 dBA). Taking into account the sound propagation models and the distance of the closest RBUs, it is ENRG's opinion that the City of Thornton dBA allowables will be met 100% of the time.

dBC –

South

During the 72-hour sound level survey, the 36-hour daytime average was 67.2 dBC, while the nighttime average was 65.1 dBC. Because both the daytime and nighttime averages exceeded the allowables as described in COGCC 423.b.(2)B. above, ENRG applied the appropriate increase pursuant to COGCC 423.d.(2). The adjusted daytime allowable is 74.2 dBC (67.2 dBC ambient + 7 dBC), while the nighttime adjusted allowable is 70.1 dBC (65.1 dBC ambient + 5 dBC). Taking into

account the sound propagation models and the distance of the closest RBUs, it is ENRG's opinion that the City of Thornton dBC allowables will be met 100% of the time.

Southwest

During the 72-hour sound level survey, the 36-hour daytime average was 74.3 dBC, while the nighttime average was 71.3 dBC. Because both the daytime and nighttime averages exceeded the allowables as described in COGCC 423.b.(2)B. above, ENRG applied the appropriate increase pursuant to COGCC 423.d.(2). The adjusted daytime allowable is 81.3 dBC (74.3 dBC ambient + 7 dBC), while the nighttime adjusted allowable is 76.3 dBC (71.3 dBC ambient + 5 dBC). Taking into account the sound propagation models and the distance of the closest RBUs, it is ENRG's opinion that the City of Thornton dBC allowables will be met 100% of the time.

SUMMARY

Washington - South

It is ENRG's opinion based on the 72-hour ambient sound level results measured at the Washington - South location from March 31 – April 2, 2022 that the COGCC daytime allowable of 65.0 dBA was met 100% of the time and the 60.0 dBA nighttime allowable was met 94.4% of the time. Additionally, based on the ambient dBC results measured, it is ENRG's opinion that the adjusted daytime allowable of 74.2 dBC was met 100% of the time, and the adjusted nighttime allowable of 70.1 dBC was met 97.2% of the time. Taking into account the proposed mitigation and the proximity of the closest RBUs for the Washington - South, it is ENRG's opinion that both the dBA and the dBC allowables can be met 100% of the time.

Washington - Southwest

Additionally, it is ENRG's opinion based on the 72-hour ambient sound level results measured at the Washington - Southwest location from March 31 – April 2, 2022 that the COGCC adjusted daytime allowable of 73.3 dBA was met 100% of the time and the 69.2 dBA adjusted nighttime allowable was met 100% of the time. Based on the ambient dBC results measured, it is ENRG's opinion that the adjusted daytime allowable of 81.3 dBC was met 100% of the time, and the adjusted nighttime allowable of 76.3 dBC was met 100% of the time. Taking into account the proposed mitigation and the proximity of the closest RBUs for the Washington - Southwest, it ENRG's opinion that both the dBA and the dBC adjusted allowables can be met 100% of the time.

Please keep in mind that these studies take into account any potential location sound, as well as, any sound from sources surrounding the location including air traffic, highway traffic, and wildlife to name a few. As a reminder, Extraction was not performing any onsite drilling or completion activities during the time of the study.

Additional sound modeling, if desired, can be completed by an ENRG representative and may require an ENRG representative to complete a site visit/tour to collect field information needed to complete a model. The sound model may be used to project sounds emitted from specific equipment at a well pad, facility, or pipeline based on engine specifications, periods of operations, and surrounding

geographic setting. This type of modeling may aid in the determination of the number of engines that may be placed at a location and permissible RPM levels. To request a model, please contact Extraction, who can contact the appropriate ENRG representative.

Sincerely,

Chrystie Carter
Operations Manager
The Environmental & Natural Resources Group, Inc.

Attachments

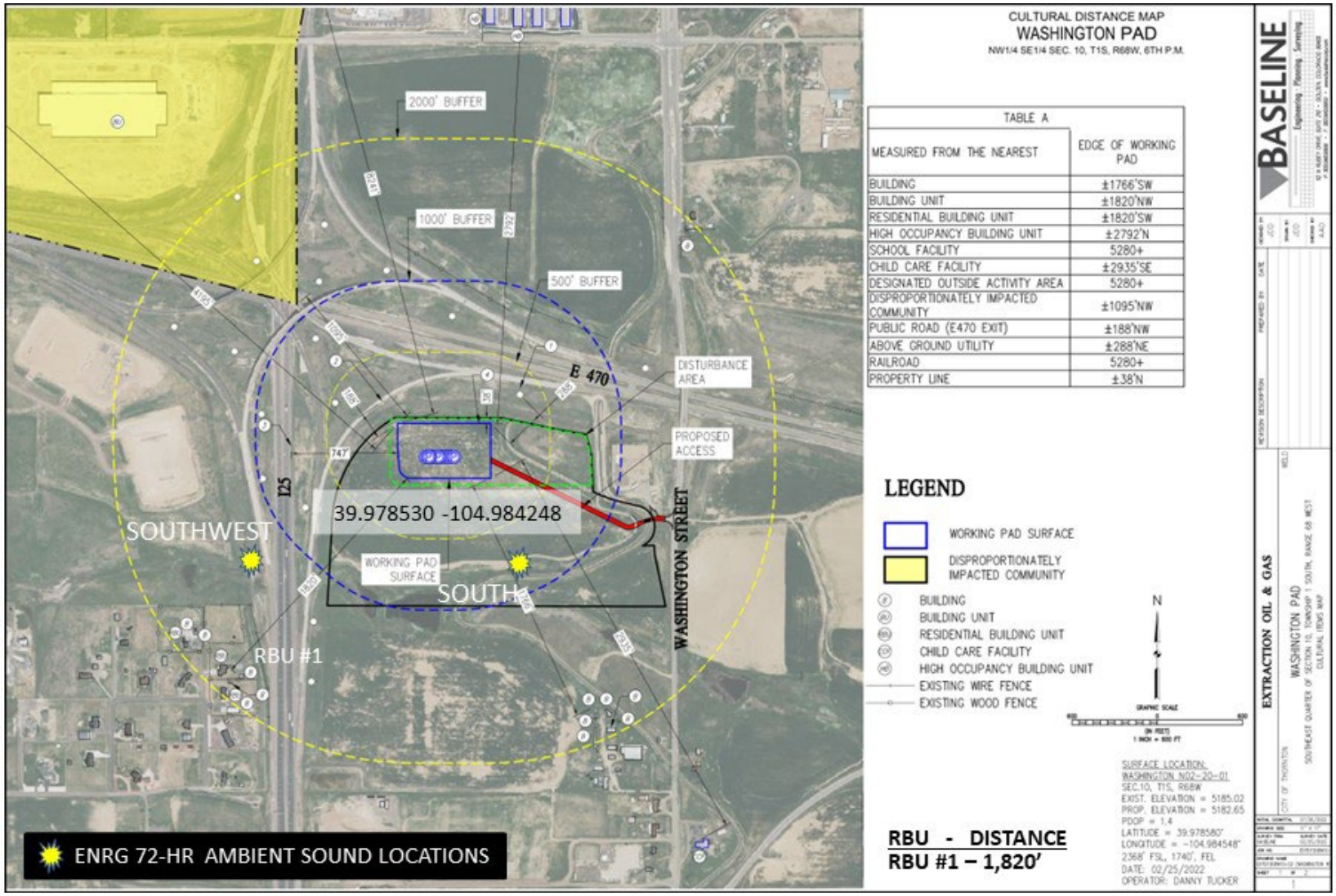

FIGURE 1. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
WASHINGTON PAD SITE & AMBIENT LOCATIONS

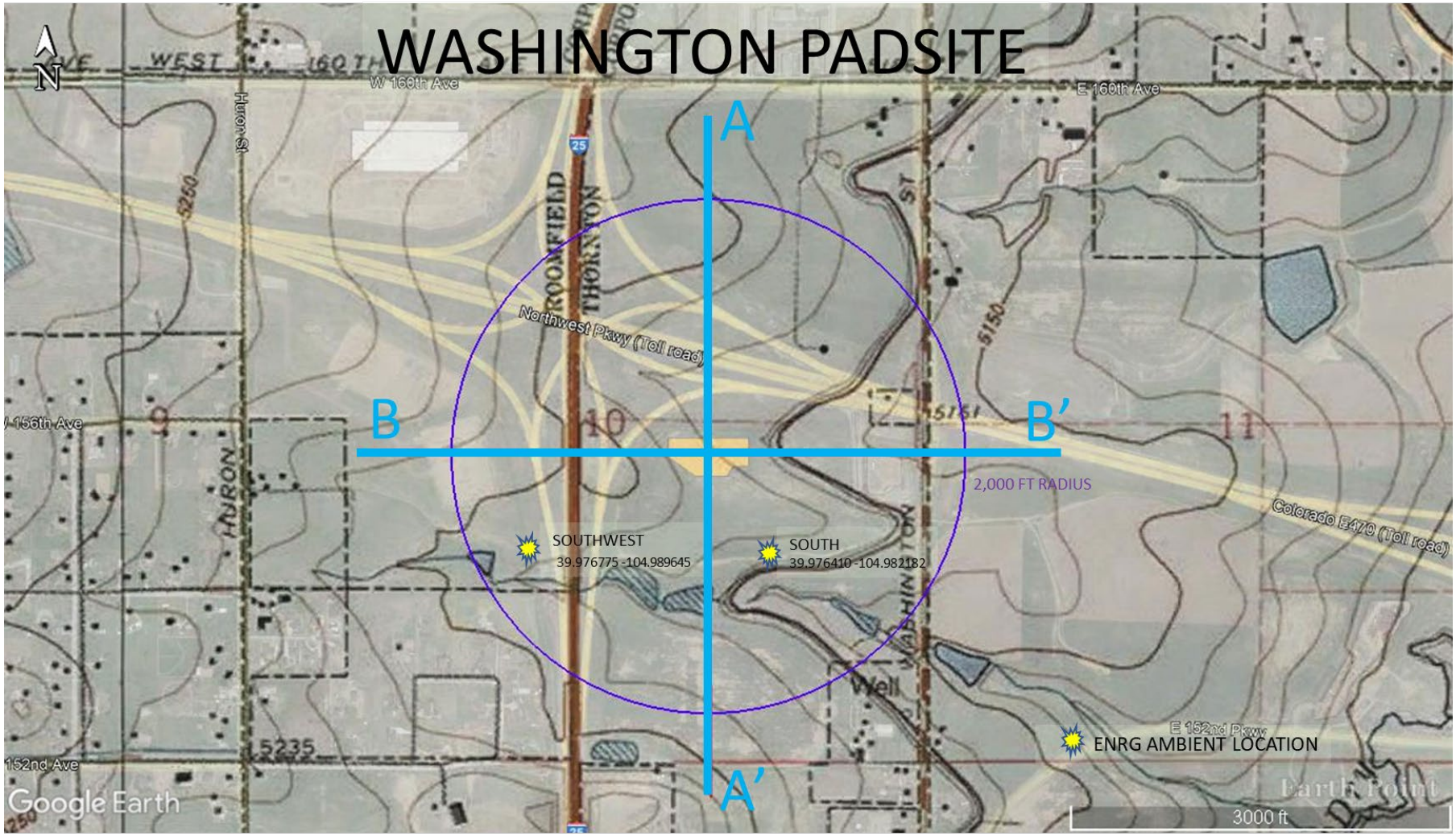

FIGURE 2. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
HYBRID TOPOGRAPHIC MAP

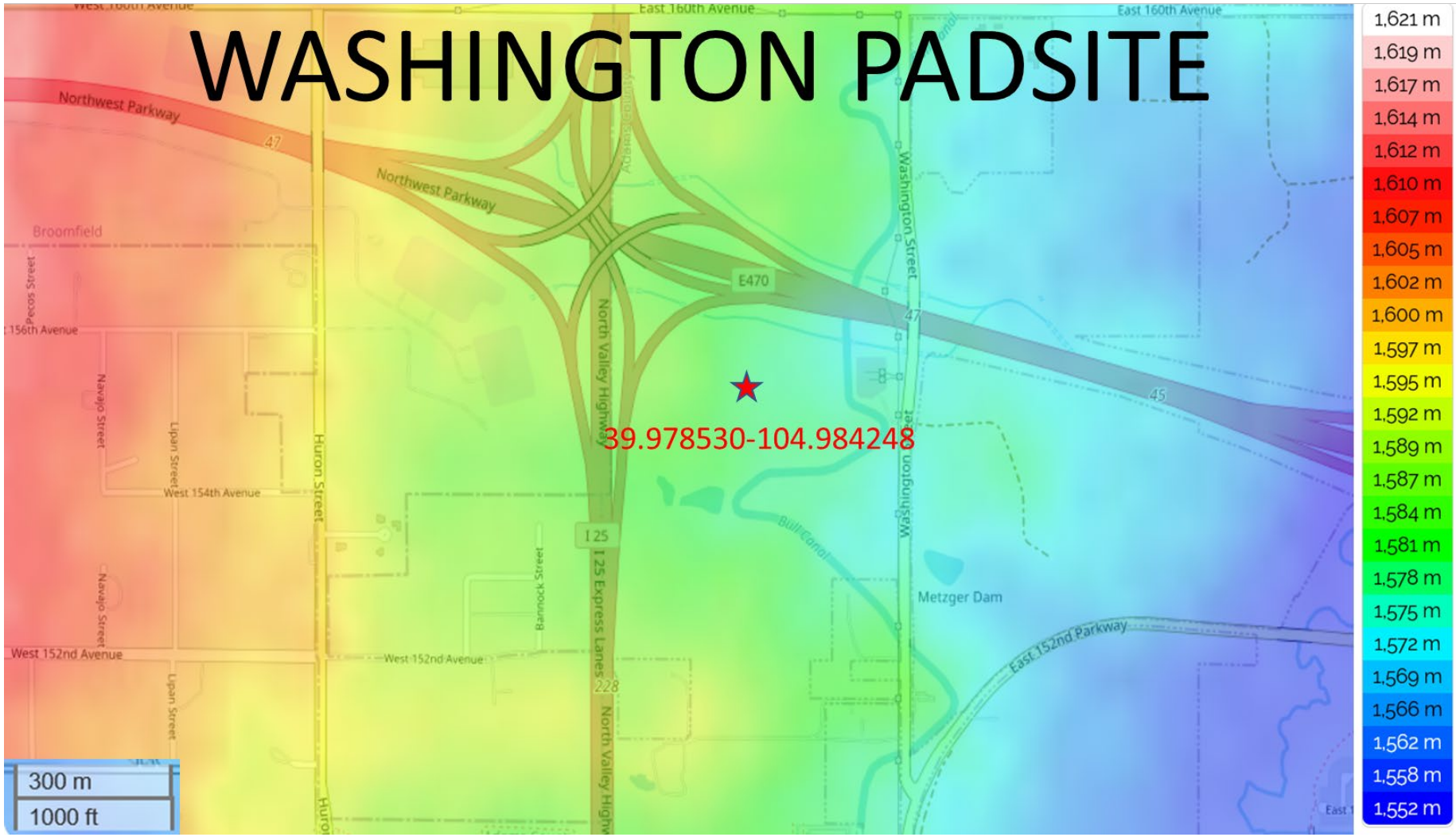

FIGURE 3. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
COLOR CODED RELIEF MAP

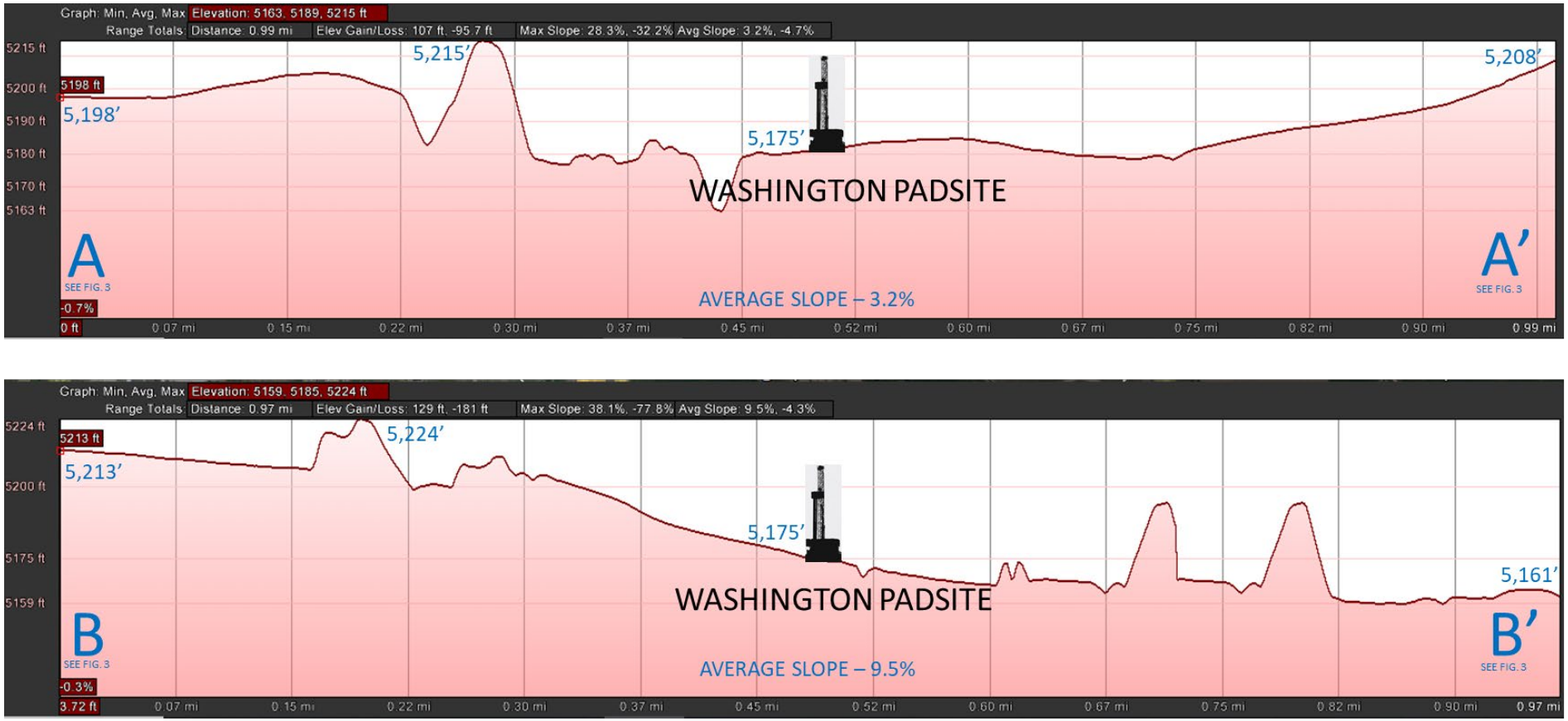

FIGURE 4. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
CROSS – SECTIONAL ELEVATION PROFILE

FIGURE 5. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
ENRG NOISE MONITORING TERMINAL

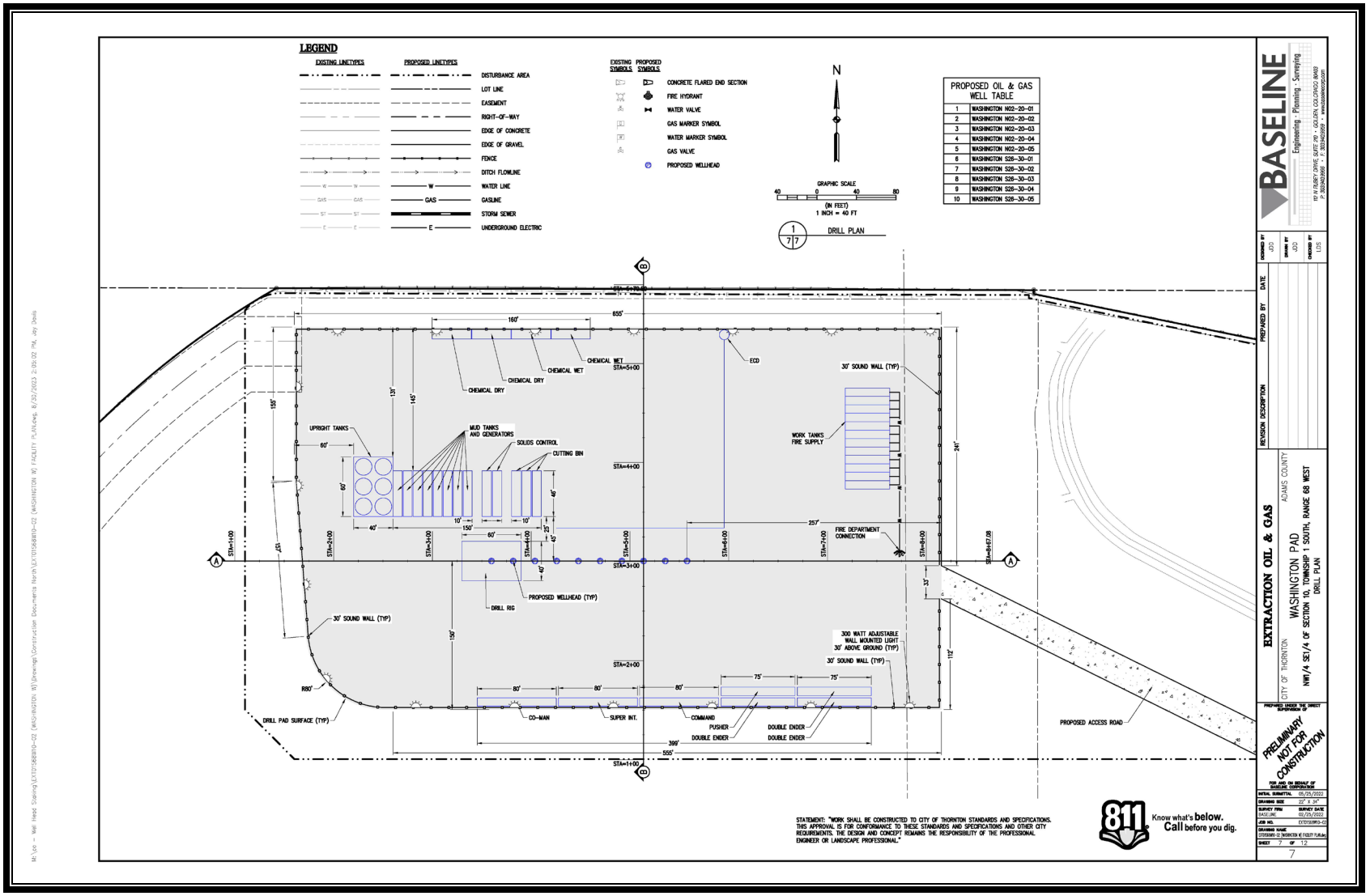

FIGURE 6. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
DRILLING RIG LAYOUT

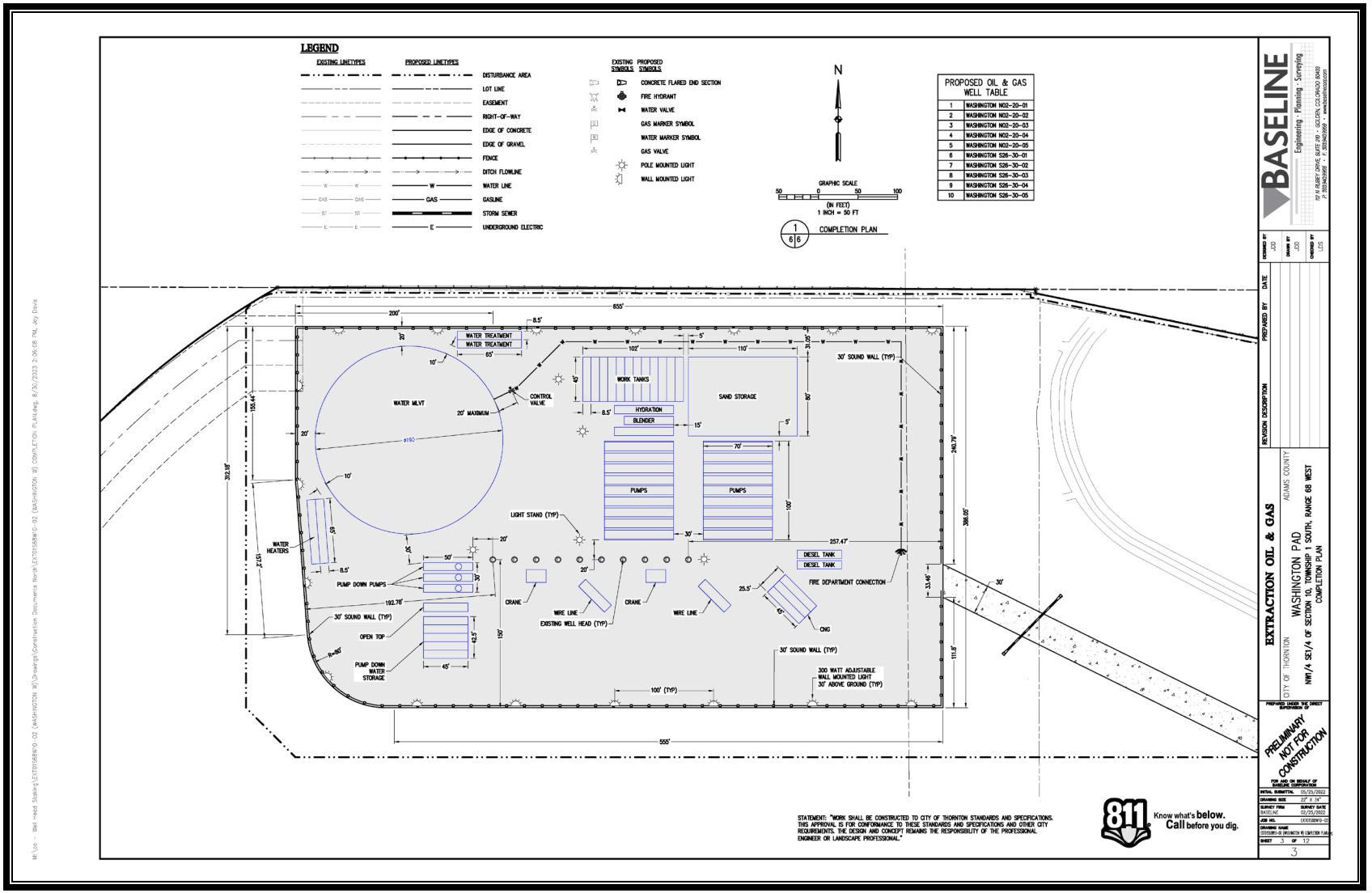

FIGURE 7. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
WELL COMPLETIONS LAYOUT

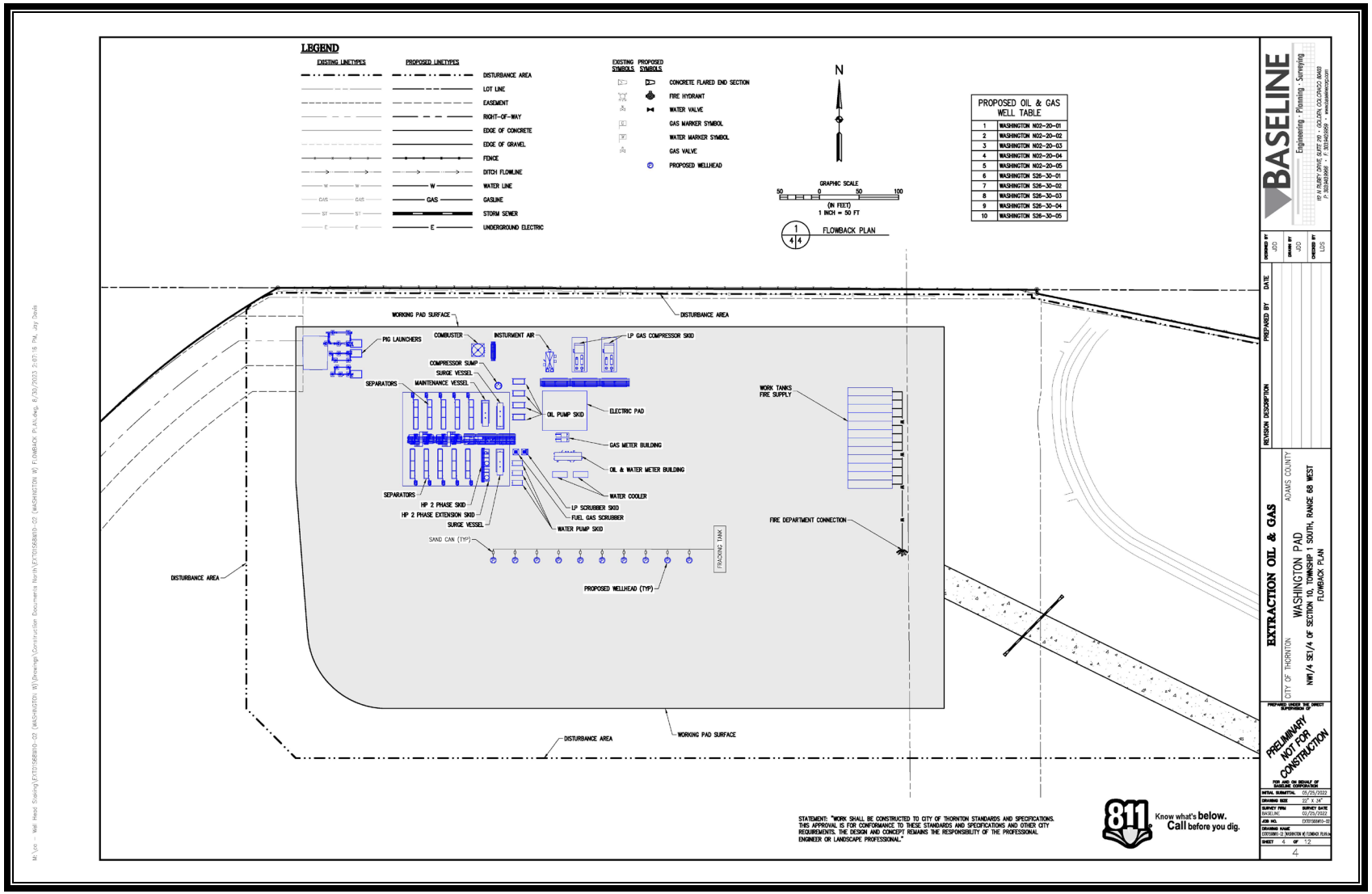

FIGURE 8. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
FLOWBACK LAYOUT

Category	Distance [m]	Average [dBA]	Range [dBA]	Data type	Reference
General works	<15	–	70–90	measurement	BoLM, 2016 [3]
Access road construction	15	89	–	estimation	NYSDEC FSGEIS, 2015 [28]
	76	75			
	152	69			
	305	63			
	457	59			
	610	57			
Site preparation	191	58–69	–	measurement	McCawley, 2013 [23]
Well pad preparation	15	84	–	estimation	NYSDEC FSGEIS, 2015 [28]
	76	70			
	152	64			
	305	58			
	458	55			
	610	52			
Truck traffic	<152	–	65–85	estimation	Garfield County, Colorado, 2011 [8]
	191		56–73	measurement	McCawley, 2013 [23]
Horizontal drilling	15	76	–	estimation	NYSDEC FSGEIS, 2015 [28]
	76	62			
	152	56			
	305	50			
	457	47			
	610	44			
Vertical drilling	191	54	–	measurement	McCawley, 2013 [23]
Drilling (unspecified)	100	57.4–62		estimation	Ambrose and Florian, 2014 [1]
	300	52.5		measurement	
	1055	36.9			
	2300	30.4			
	191	75–80			Witter et al. 2013 [40]

From Hayes et al (2017)

TABLE 1.1. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE NOISE MITIGATION PLAN

TYPICAL DRILLING AND COMPLETIONS SOUND LEVELS

Category	Distance [m]	Average [dBA]	Range [dBA]	Data type	Reference
Drilling (unspecified)	30	–	75–87	measurement	behrens and Associates, Inc., 2006 [2]
	61		71–79		
	91		65–74		
	122		60–71		
	152		56–68		
	183		54–59		
	213		51–55		
	244		51–54		
Hydraulic fracturing	15	99–104	–	estimation	NYSDEC FSGEIS, 2015 [28]
	76	85–90			
	152	79–84			
	305	73–78			
	457	69–74			
	610	67–72			
	191	52	47–60	measurement	McCawley, 2013 [23]
Hydraulic fracturing/ flowback	191	58	55–61	measurement	McCawley, 2013 [23]
Compressor station(s)	<305	63.15	35.3–94.8	measurement	MIfAEH, 2014 [22]
	305–610	55.48	35.3–77.6		
	610–762	54.09	35.3–80.3		
	>1067	51.50	35.3–74.1		
	On-site	69–86	–	measurement	BoFM, 2006 [3]
	1609	58–75			
	2012	54			
	100	53,8		estimation	Ambrose and Florian, 2014 [1]
	140	50,9		measurement	

From Hayes et al (2017)

TABLE 1.2. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE NOISE MITIGATION PLAN

TYPICAL DRILLING AND COMPLETIONS SOUND LEVELS

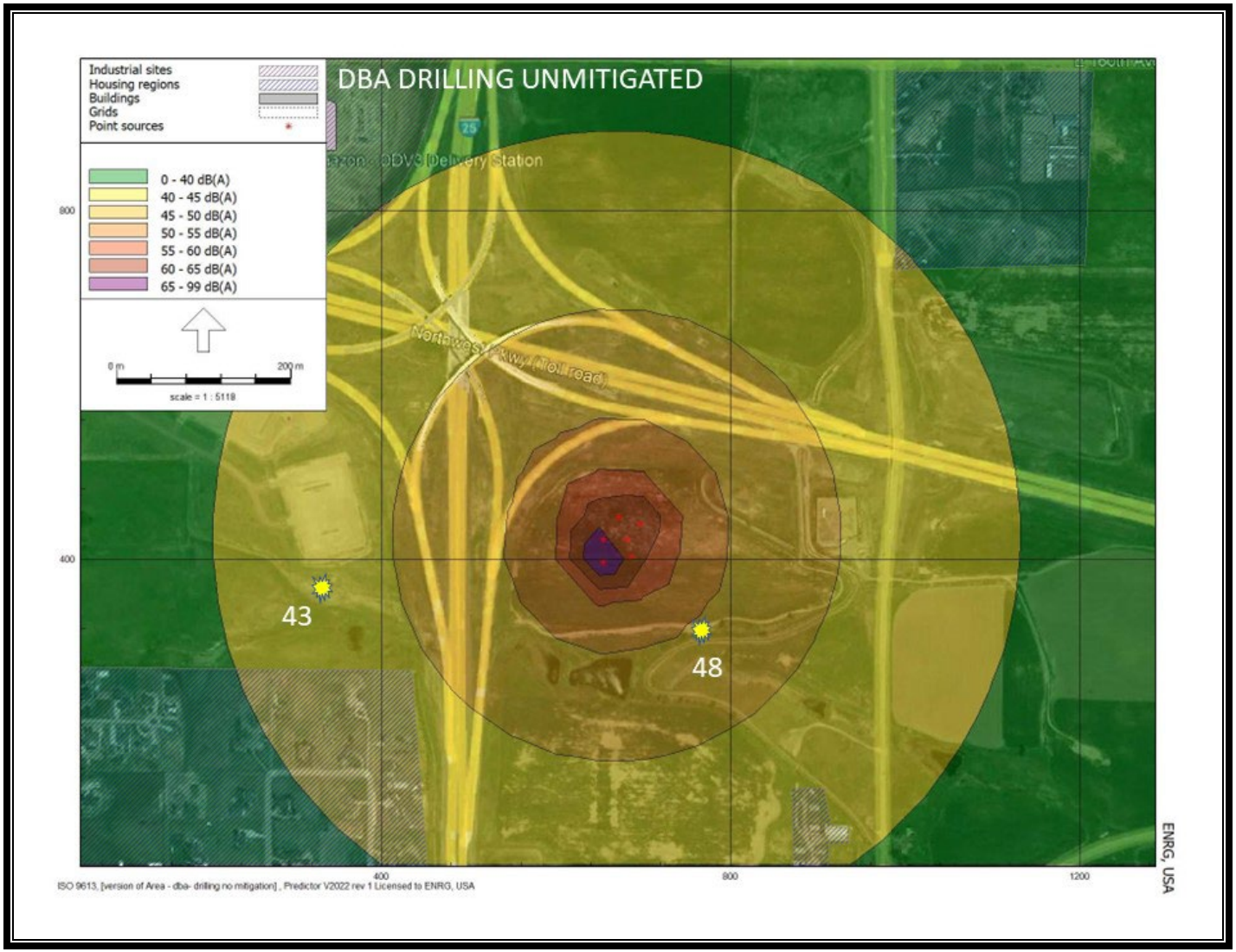

FIGURE 9. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA DRILLING UN-MITIGATED SOUND LEVELS

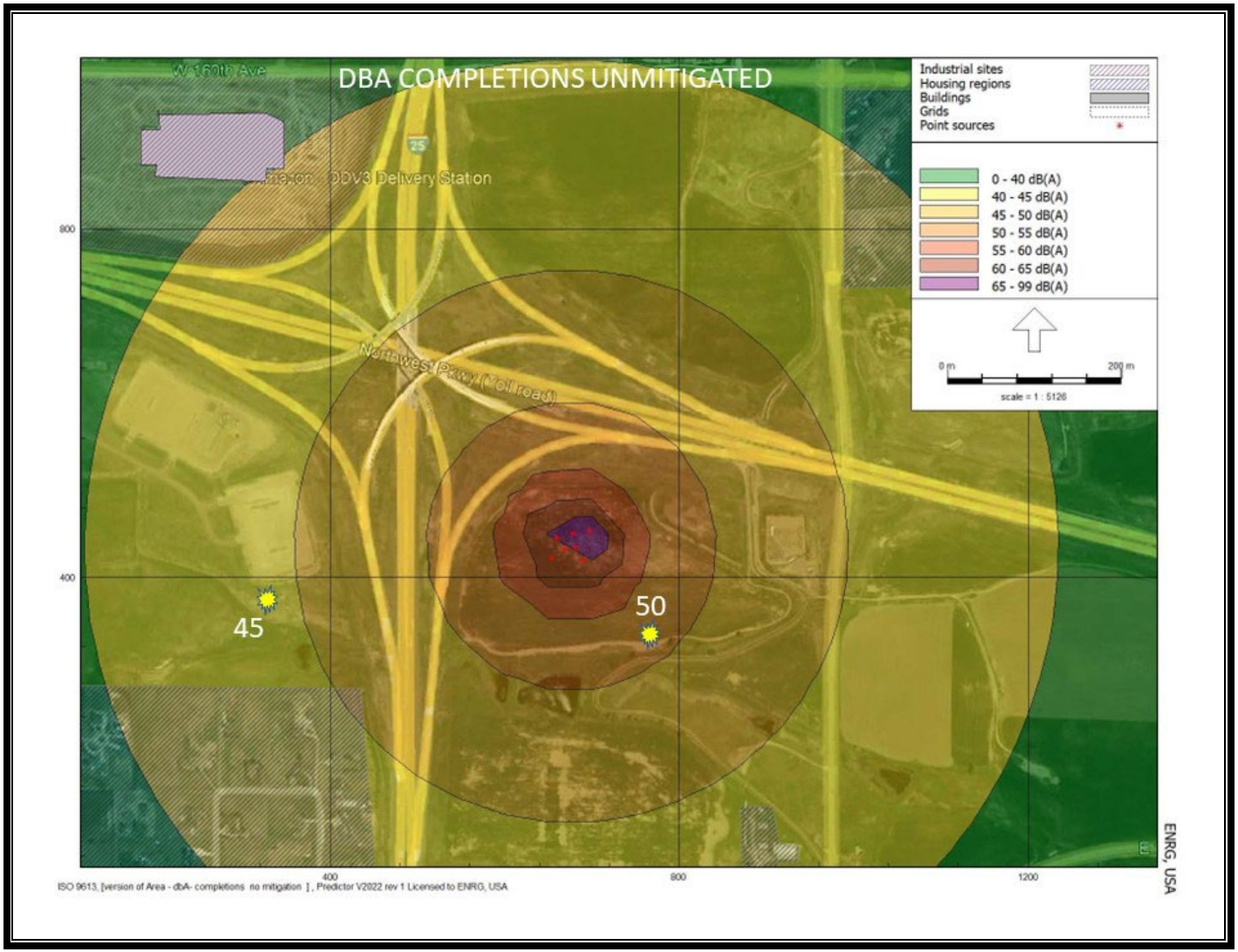

FIGURE 10. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA COMPLETIONS UN-MITIGATED SOUND LEVELS

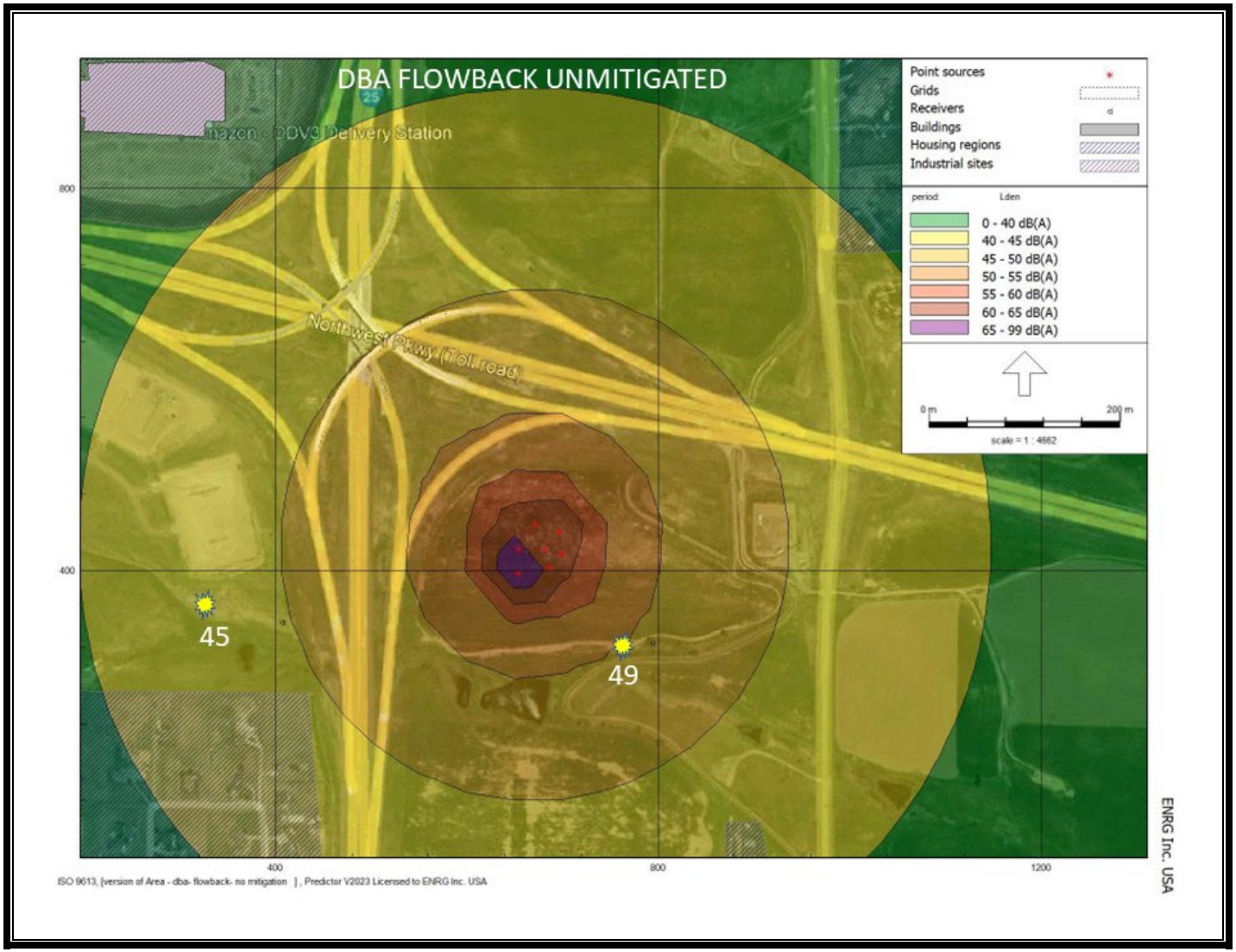

FIGURE 11. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA FLOWBACK UN-MITIGATED SOUND LEVELS

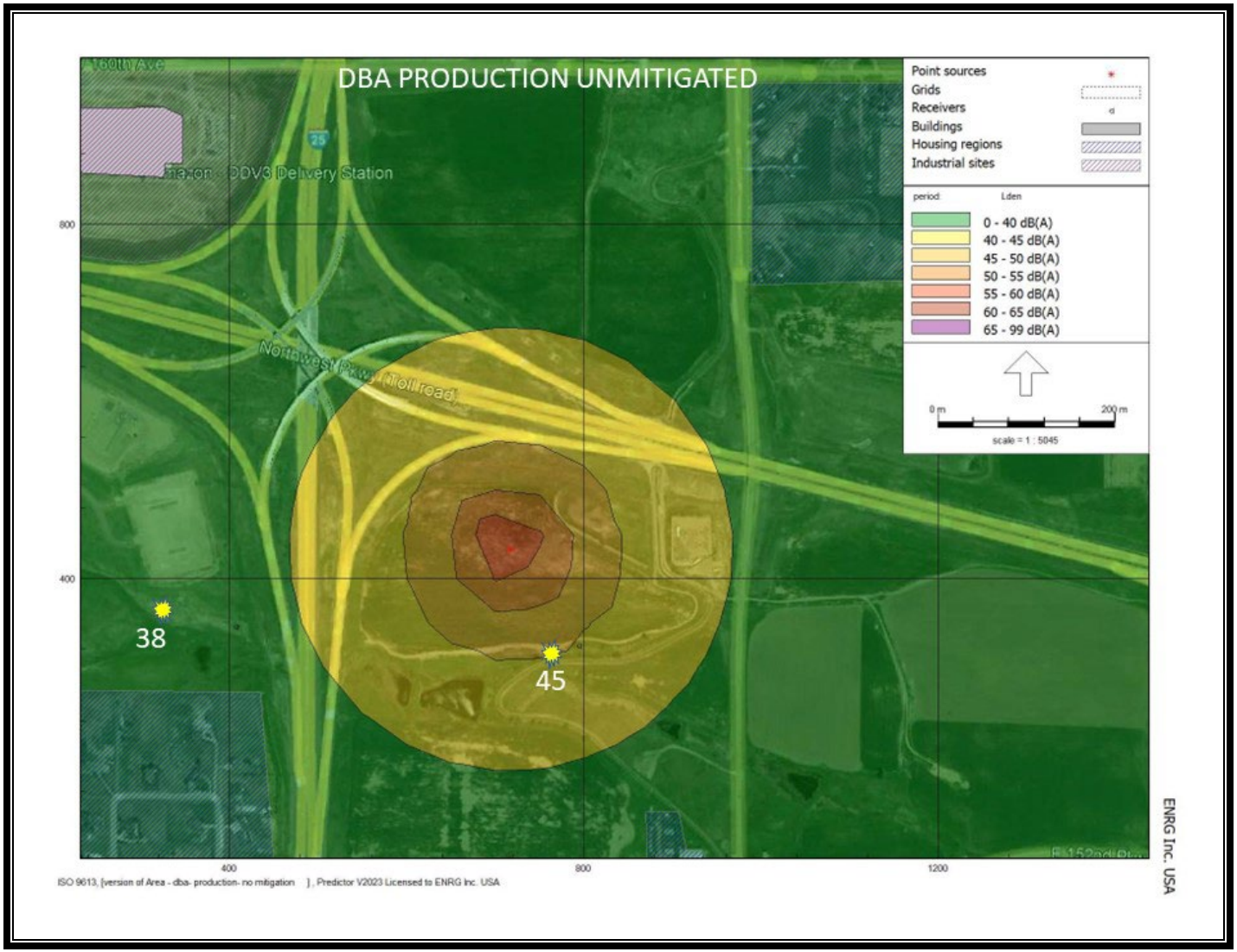

FIGURE 12. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA PRODUCTION UN-MITIGATED SOUND LEVELS

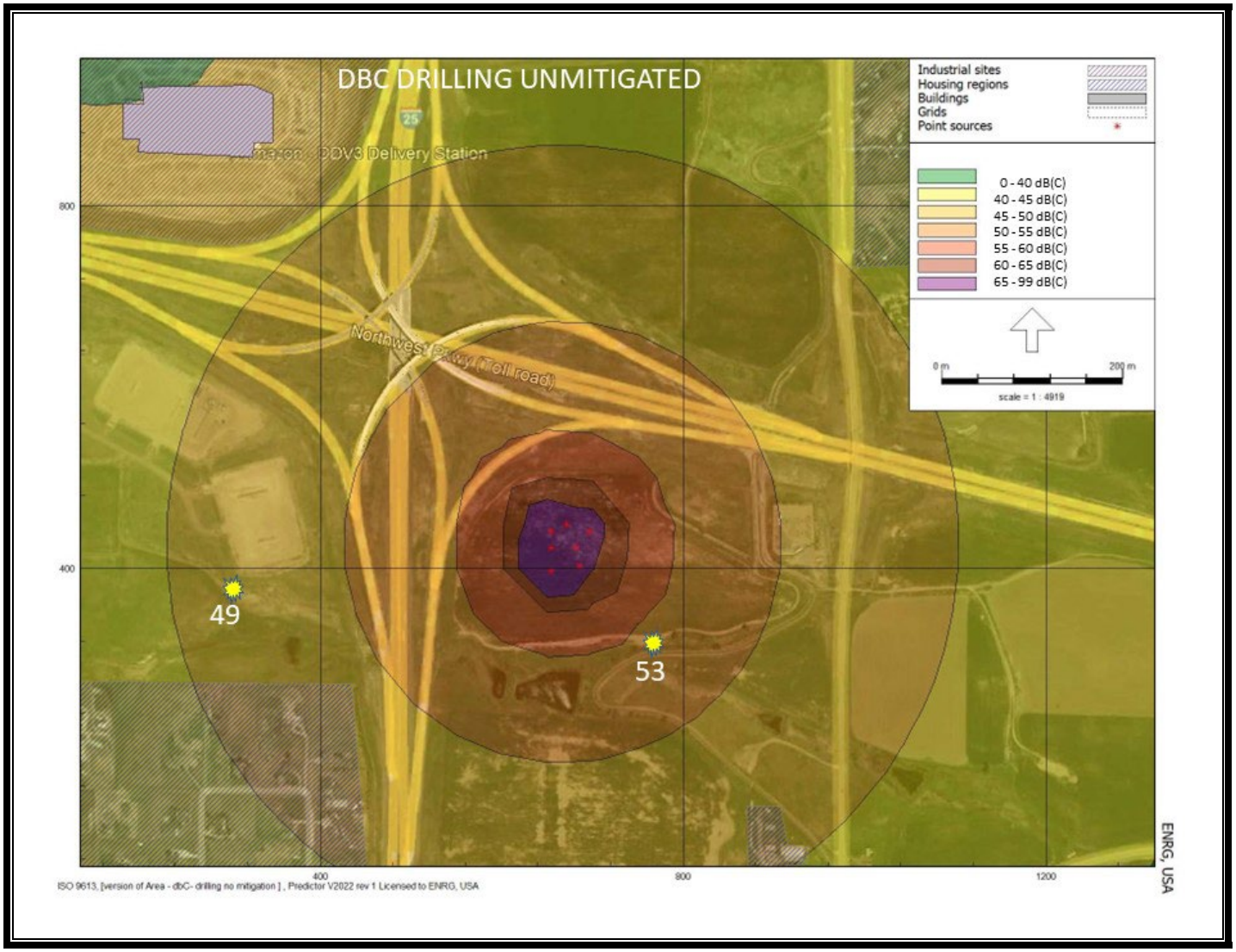

FIGURE 13. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC DRILLING UN-MITIGATED SOUND LEVELS

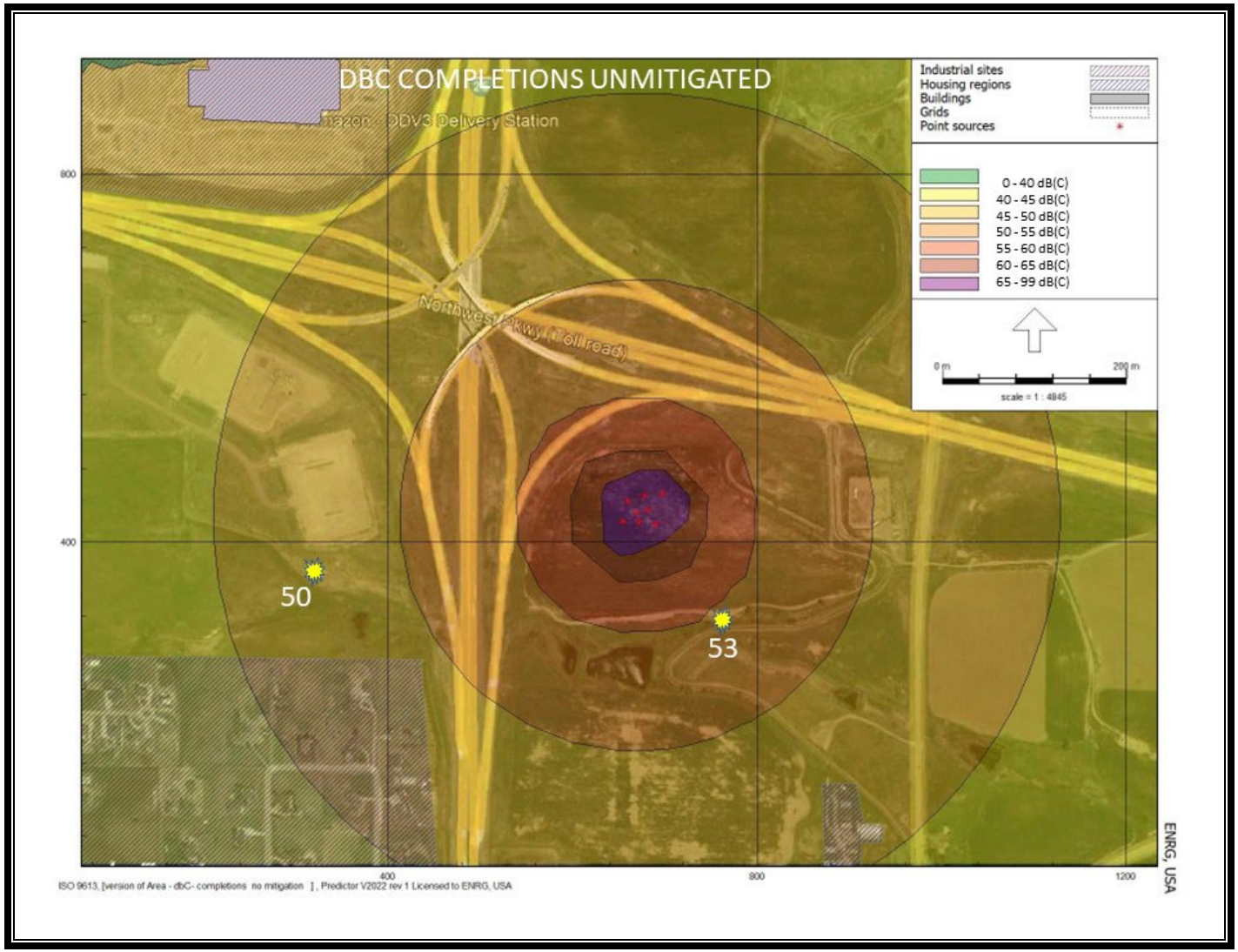

FIGURE 14. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC COMPLETIONS UN-MITIGATED SOUND LEVELS

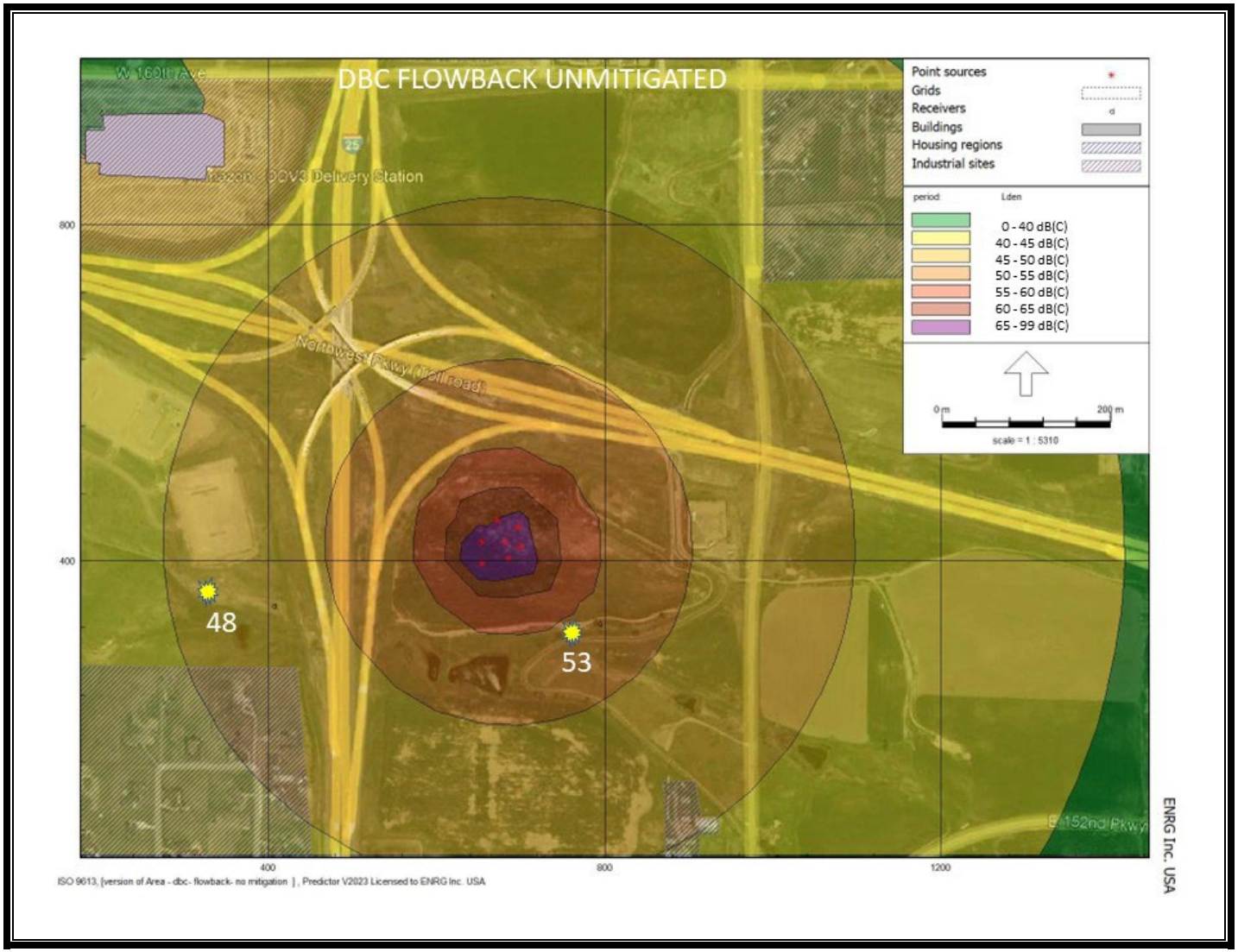

FIGURE 15. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC FLOWBACK UN-MITIGATED SOUND LEVELS

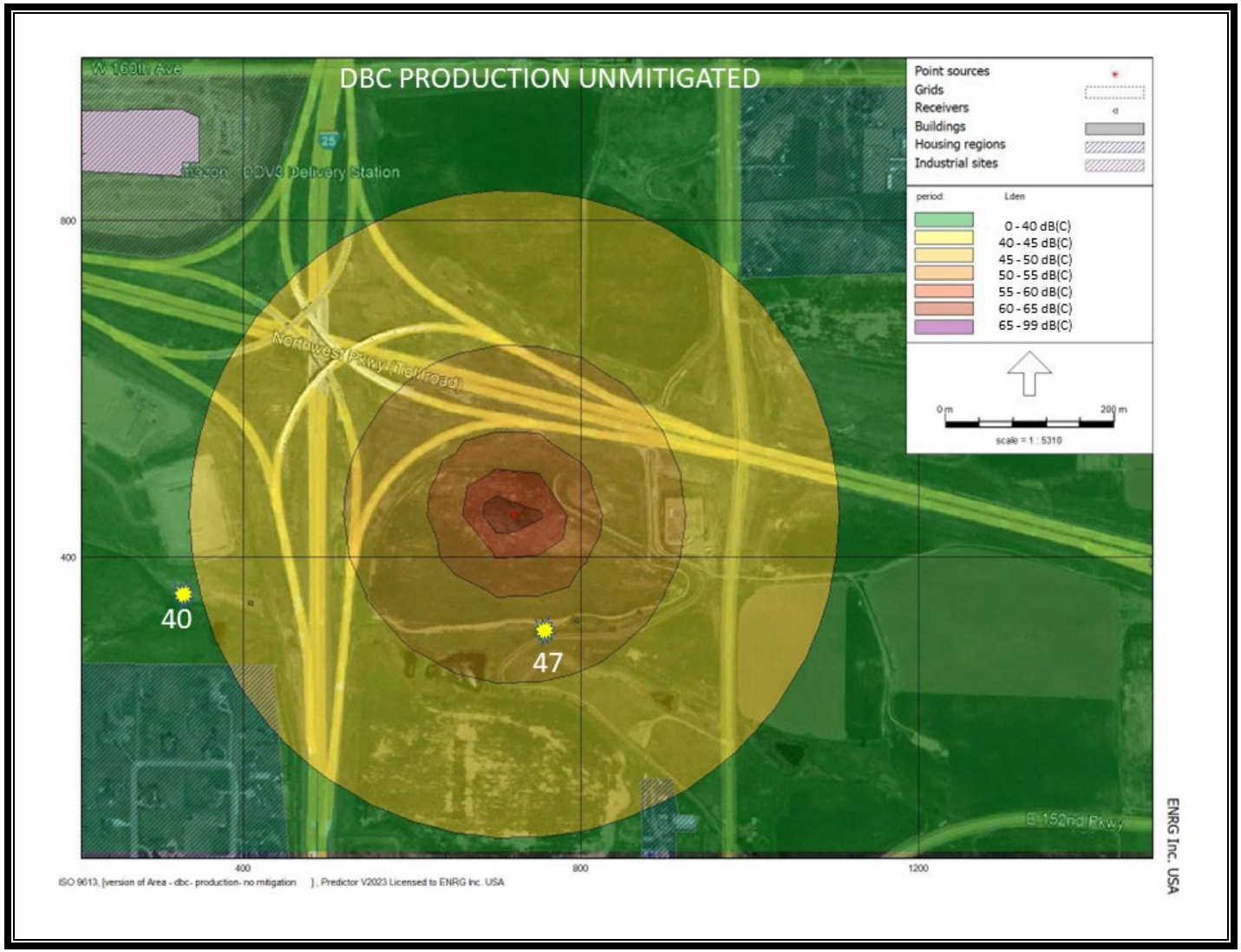

FIGURE 16. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC PRODUCTION UN-MITIGATED SOUND LEVELS

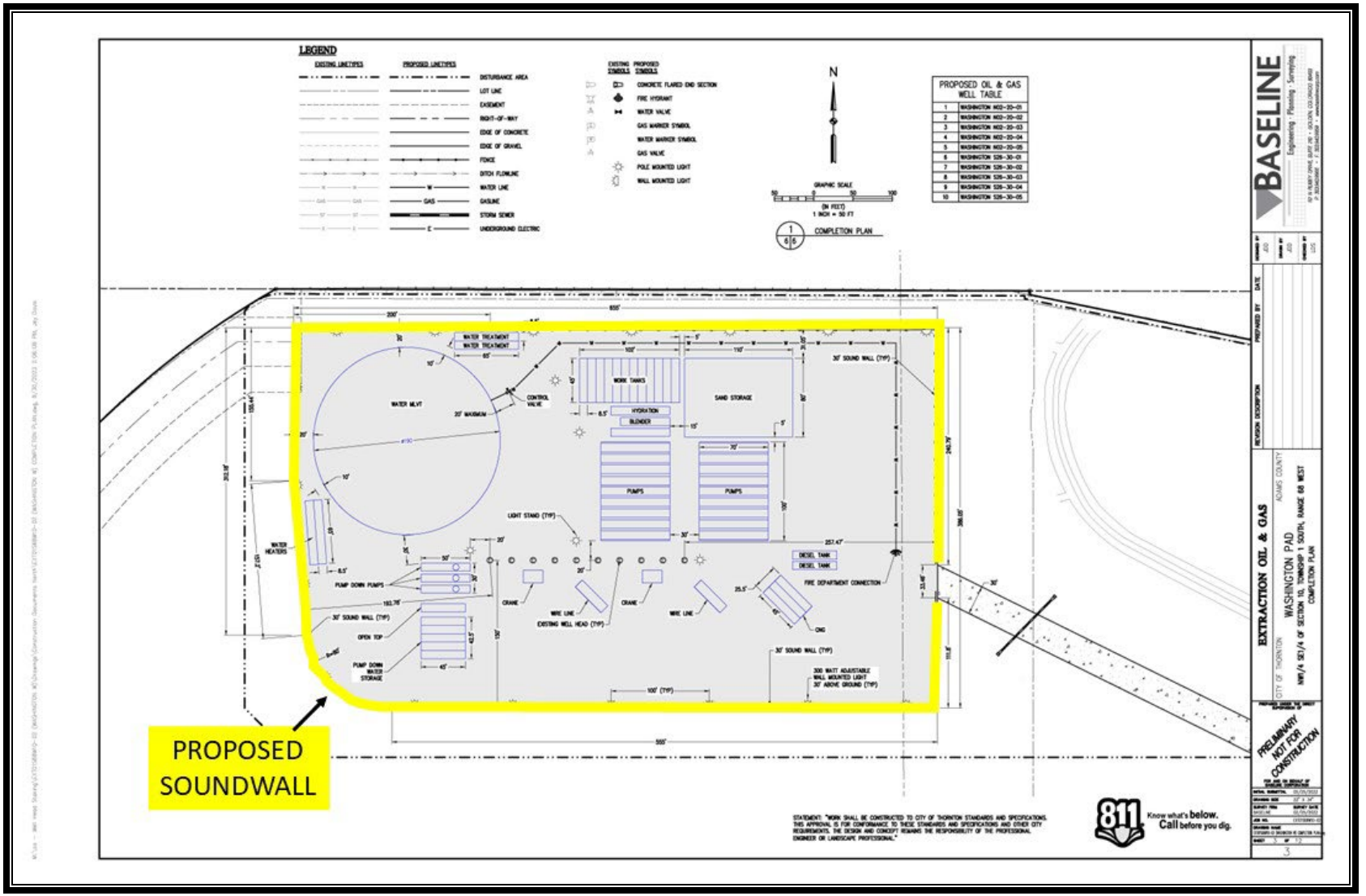

FIGURE 17. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
PROPOSED SOUND WALL LOCATION

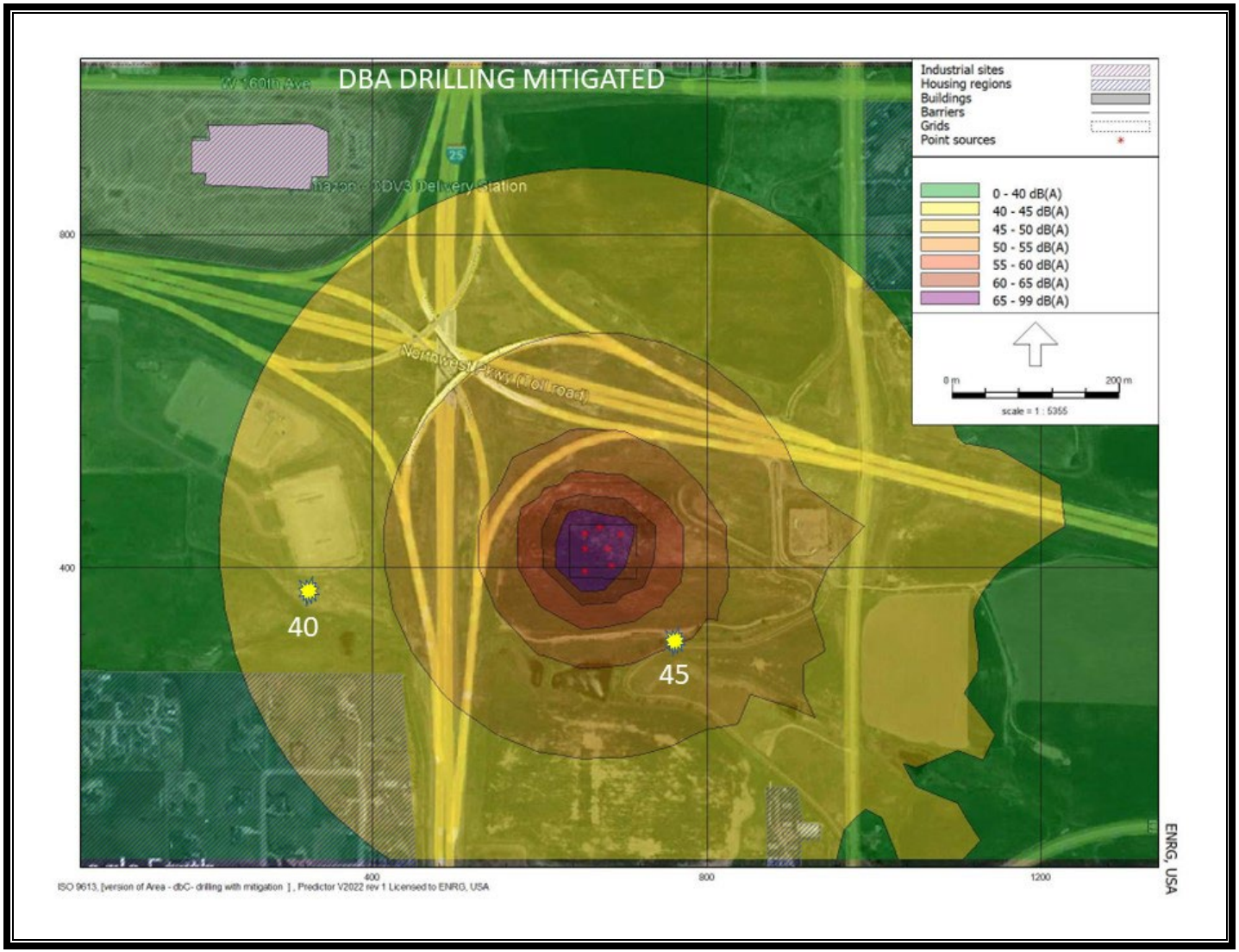

FIGURE 18. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA DRILLING MITIGATED SOUND LEVELS

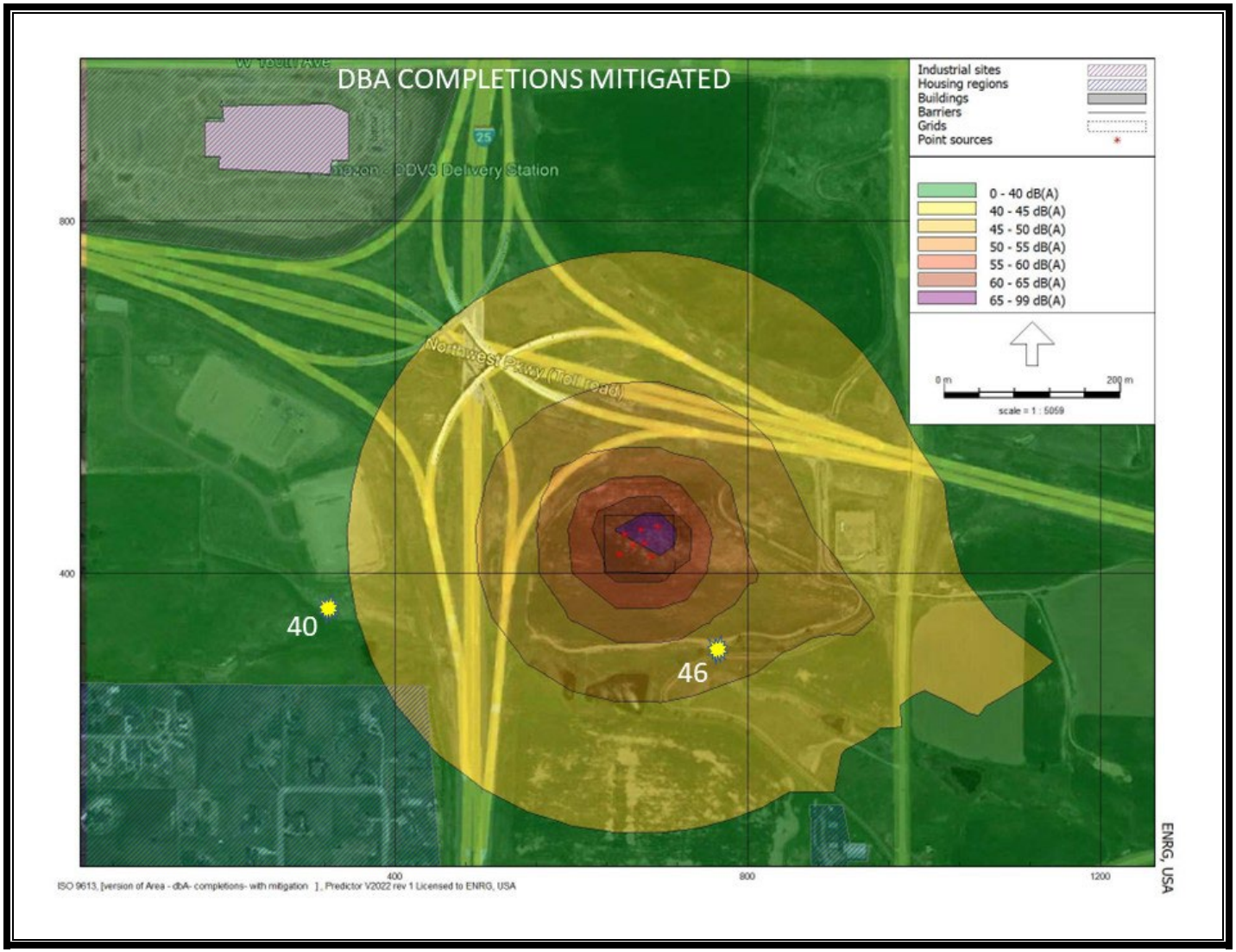

FIGURE 19. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA COMPLETIONS MITIGATED SOUND LEVELS

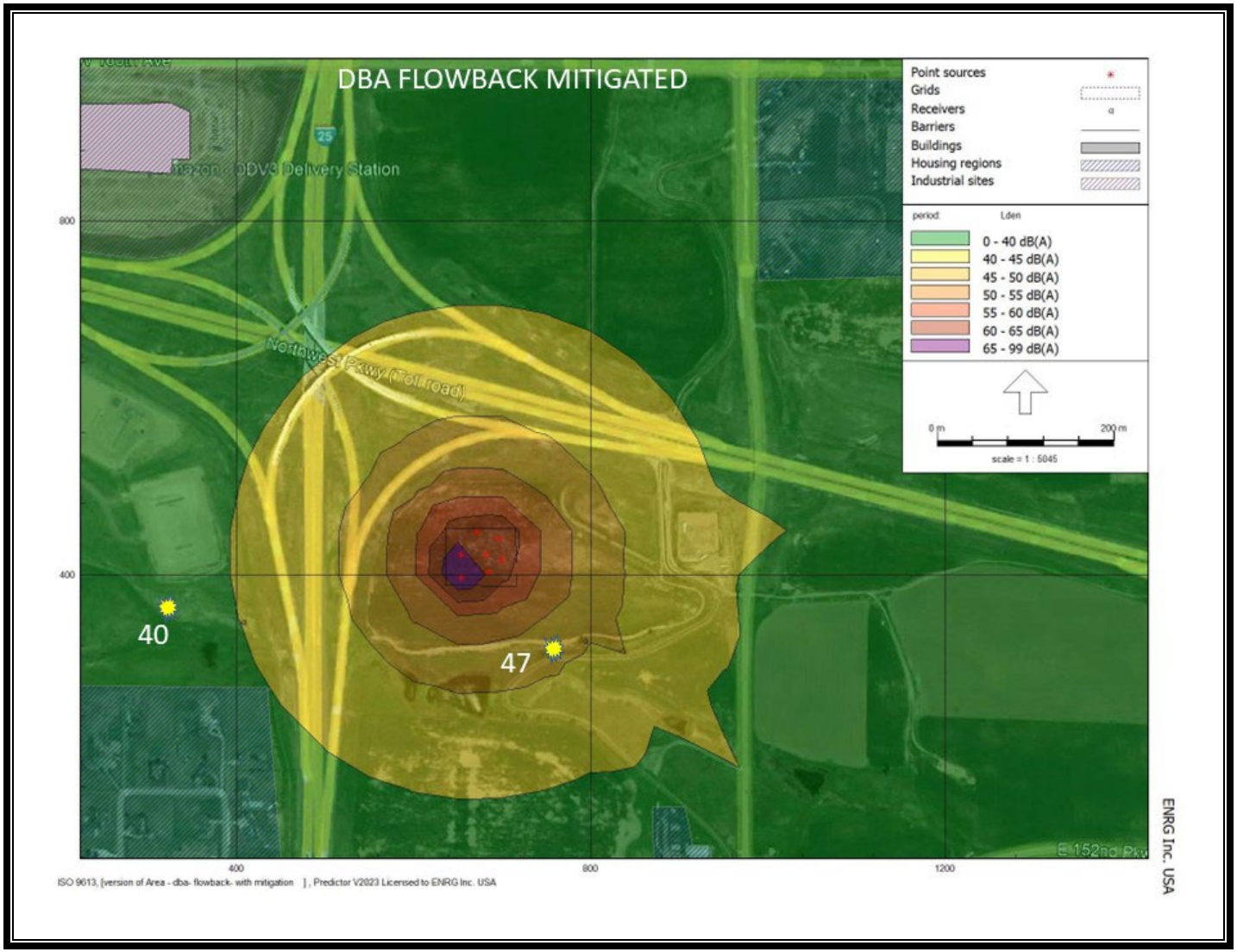

FIGURE 20. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBA FLOWBACK MITIGATED SOUND LEVELS

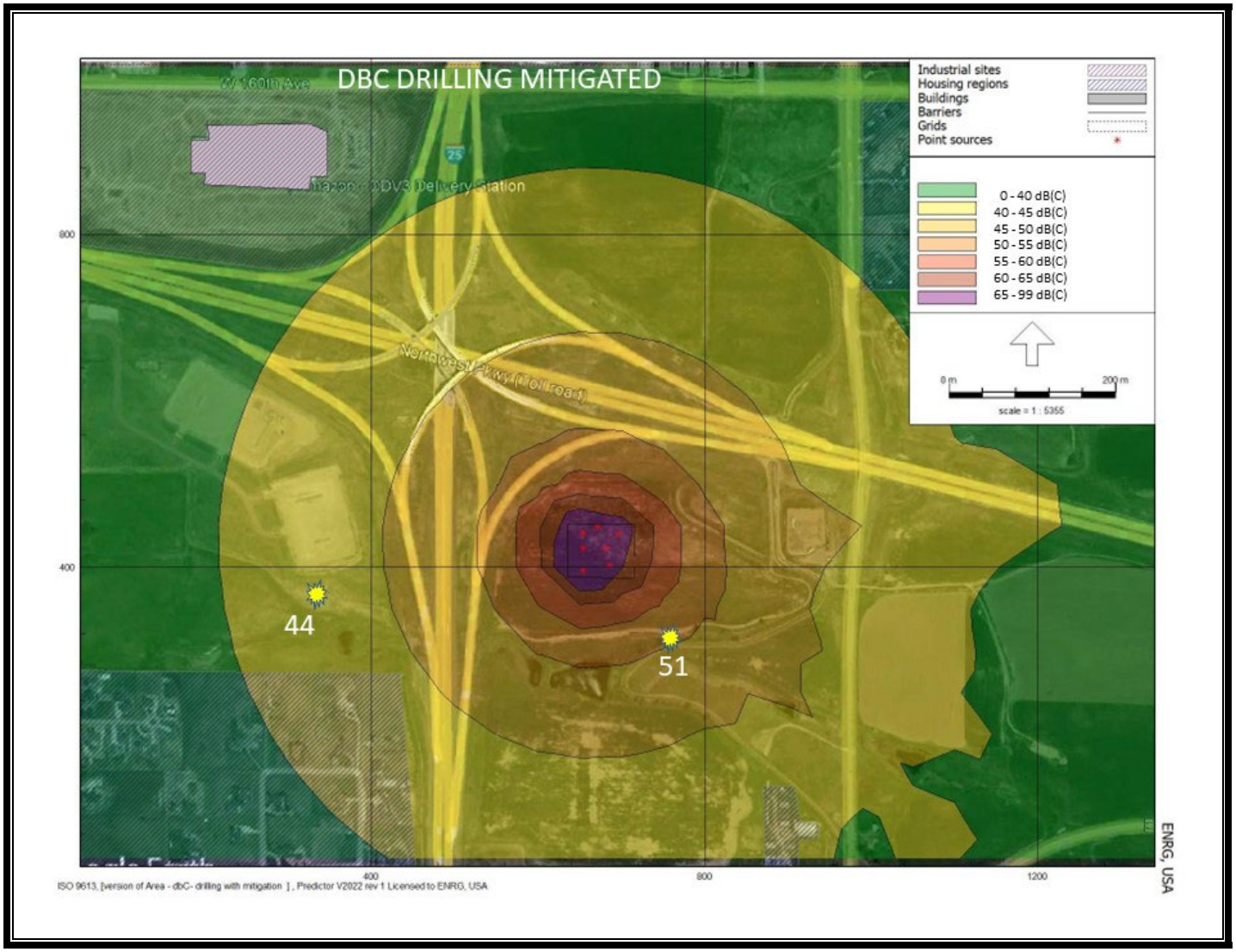

FIGURE 21. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC DRILLING MITIGATED SOUND LEVELS

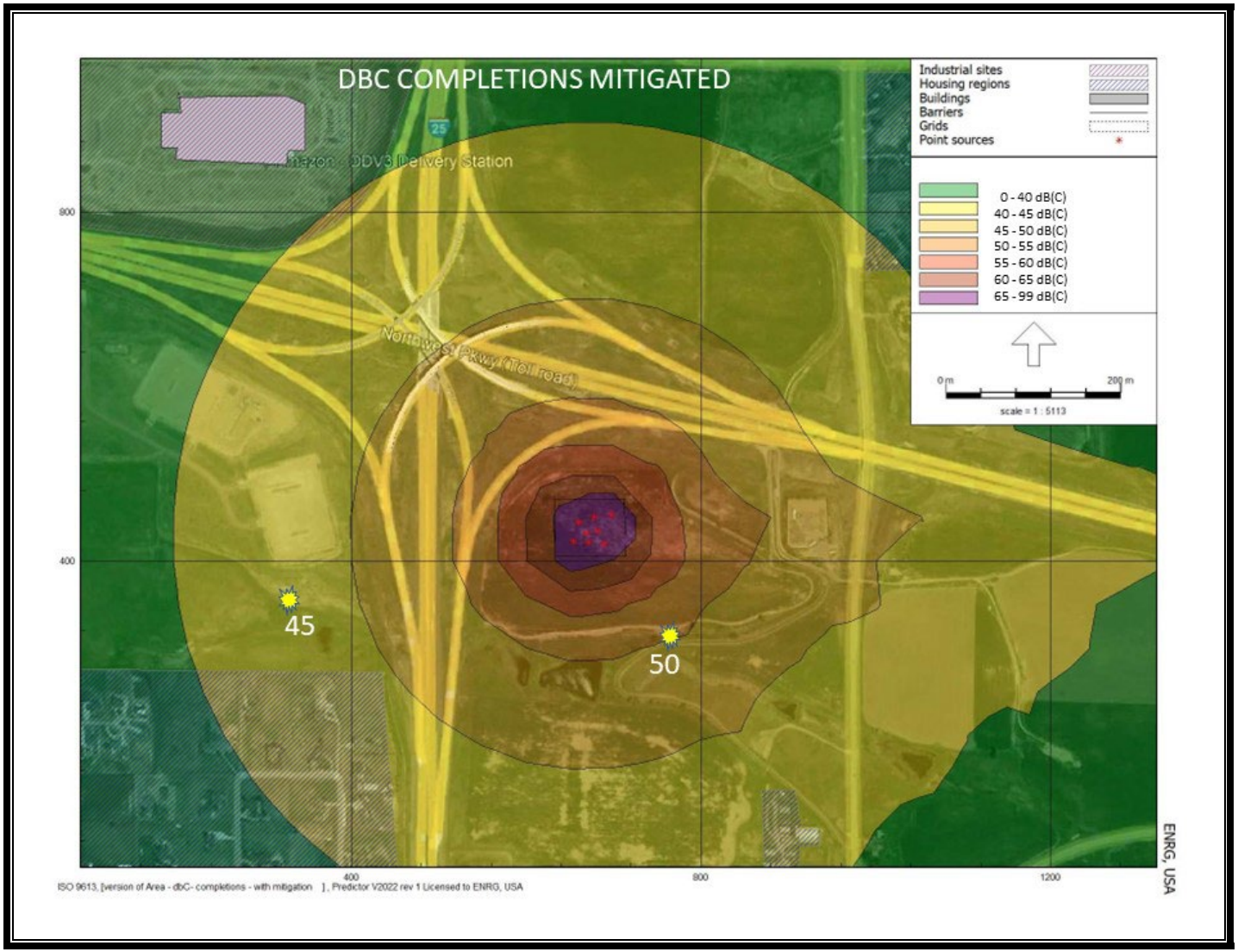

FIGURE 22. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC COMPLETIONS MITIGATED SOUND LEVELS

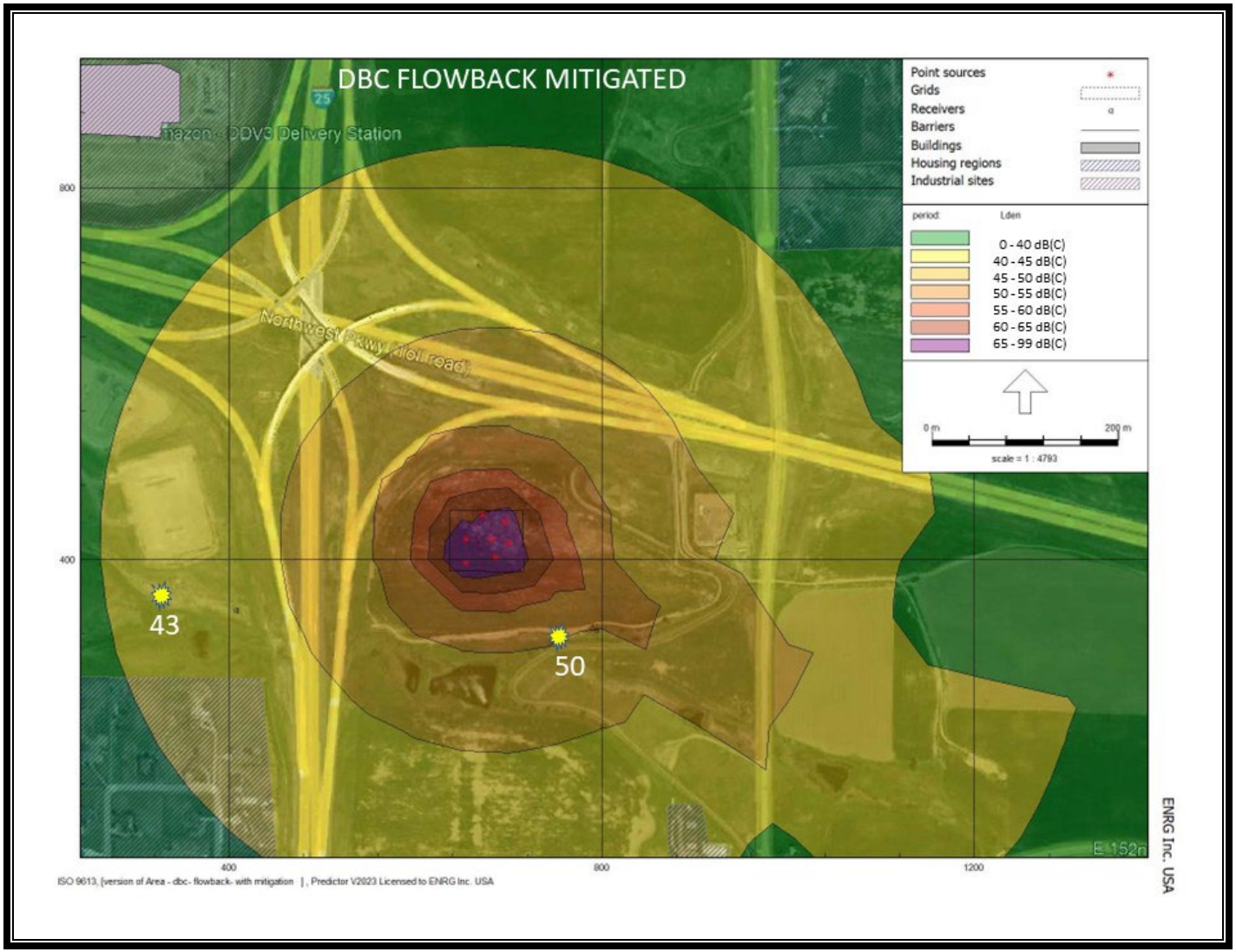

FIGURE 23. EXTRACTION OIL & GAS, INC. – WASHINGTON PAD SITE
NOISE MITIGATION PLAN
dBC FLOWBACK MITIGATED SOUND LEVELS

EXHIBIT A

72-HOUR AMBIENT SOUND LEVEL REPORTS:

WASHINGTON PAD

WASHINGTON – SOUTH METER
WASHINGTON – SOUTHWEST METER

CITY OF THORNTON, COLORADO

39.978530 -104.984248

PREPARED BY:

ENRG
The Environmental & Natural Resources Group, Inc.

AUGUST 31, 2023

May 24, 2022

Civitas Resources, Inc.
Attn: Mr. Claude Boiteau
Asset Development
555 17th Street #3500
Denver, Colorado 80202

RE: CIVITAS RESOURCES, INC. – WASHINGTON PADSITE
72-HOUR PRE-DRILLING AMBIENT SOUND LEVEL SURVEY
WASHINGTON – SOUTH AMBIENT LOCATION

Dear Mr. Boiteau:

Per your request, the Environmental and Natural Resources Group Inc. (ENRG) performed a 72-hour pre-drilling ambient sound level survey for Extraction Oil &Gas Inc, a wholly owned subsidiary of Civitas Resources, Inc. (Civitas), in the vicinity of the proposed Washington Pad and future drilling location from March 31 – April 2, 2022. Figure 1 shows the location where the ambient sound level survey was conducted, referred to as Washington - South. This sound level survey was performed to conform to the Colorado Oil and Gas Conservation Commission's (COGCC) 400-Series regulations governing "Operations and Reporting", specifically Rule 423, adopted January 15, 2021.

The Washington Pad is located at approximately Latitude 39.978530 Longitude -104.984248 (Figure 1). According to Google Earth maps and visual observation, the proposed pad is located east of Interstate 25 and south of Northwest Parkway (E470) within the city limits of Thornton, (Adams County) Colorado (NWSE, Sec 10 T1S R68W). The City of Thornton identifies the parcels containing the Washington Pad as zoned "Planned Development" with an intended future land use designation of "Employment Center – Warehouse Overlay". The surrounding properties are primarily utilized for farming/ranching, oil and gas, and commercial or residential development. Land or properties within ¼ mile of the Washington Pad consists of relatively undisturbed uplands. The proposed well site consists of an active agricultural field.

ENRG's Noise Monitoring Terminal (NMT), which is equipped with a Type I Bruel & Kjaer (B&K) 2250 sound level meter, was calibrated, programmed for dBA and dBC frequencies and installed at the Washington - South ambient location by ENRG personnel before 0:00 on Thursday, March 31, 2022. Initial and final readings were verified with a calibration device to ensure accuracy during and after the test. The objective was to measure and document the site's ambient sound levels until 23:59 on Saturday, April 2, 2022. The NMT was located approximately 850 feet southeast from the edge of the proposed drilling location and approximately 2,400 feet northwest from the nearest residential building unit boundary (Figure 1). The Washington - South NMT was placed where no obstructions were allowed to block the meter from measuring and recording accurate ambient sound levels (Figure 2). One other 72-hour ambient sound level survey was conducted simultaneously with the Washington - South, referred to as the Washington - Southwest. The results of the Washington - Southwest ambient

survey are included in a separate report. The Washington - South and Washington - Southwest locations are shown in Figure 1.

Summary

The results of the 72-hour ambient sound levels are attached as Table 1, Figure 3, and Figure 4. A summary of the 72-hour sound level averages is shown on Table 1. Figure 3 shows the graphical results of the minimum, maximum, and average of the 72-hour sound levels. Figure 4 indicates the 72-hour dBA and dBC average sound levels, allowable sound levels, maximum hourly wind levels and allowable wind levels.

The Leq results of the 72-hour ambient sound levels are summarized below:
72-hour ambient sound level – 55.3 dBA and 66.2 dBC
36-hour daytime ambient sound level – 54.8 dBA and 67.2 dBC
36-hour nighttime ambient sound level – 55.7 dBA and 65.1 dBC

A- Scale Allowables

As shown above and on Table 1, ENRG and Civitas have measured and reported a 72-hour ambient sound level of 55.3 dBA, a 36-hour daytime ambient sound level of 54.8 dBA, and a 36-hour nighttime ambient sound level of 55.7 dBA. Therefore, based on the COGCC 423.b.(2)A. regulation, the allowable for the Washington - South location will be 65.0 dBA during the day and 60.0 dBA at night as discussed and referenced in the regulation excerpt below:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

A. *In Residential/Rural or Commercial/Agricultural, maximum permissible noise levels will be 60 db(A) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(A) in the hours between 7:00 a.m. to 7:00 p.m.;*

The regulations go on to state the following:

(6) *Unless otherwise required by Rule 423.b.(7), during the hours between 7:00 a.m. and the next 7:00 p.m. the maximum permissible noise levels listed in Table 423-1 may be increased 10 dB(A) for a period not to exceed 15 minutes in any 1-hour period. The increase is permissible only for a 1 - hour period during any 12 hours.*

The above regulation permits the allowable of 65 dBA during daytime hours to be increased to 75 dBA for a period of 15 minutes in any 1-hour period not to exceed a total of 60 minutes during the course of any 12 - hour daytime period.

It is ENRG's opinion, in reference to "A" weighted data, and based on the 72-hour ambient results measured at the Washington - South ambient location from March 31 – April 2, 2022, that the COGCC's daytime hourly sound level (Leq) allowable for drilling and completions operations of 65.0 dBA was met 100% (36 hours) of the time.

Because the 36-hour nighttime average was below the 60 dBA allowable (55.7 dBA), an adjusted allowable is not recommended at this time. However, it is important to note that the 60.0 dBA allowable was met 94.4% (34 hours) and therefore did not comply 100% of the time during the 36-hour nighttime measurements. These results are indicated on the hourly dBA results measured by ENRG on Table 1, Figure 3, and Figure 4.

C - Scale Allowables

As part of the COGCC Rule 423.b. requirement regarding ambient sound studies, ENRG and Civitas have measured and reported a 72-hour ambient "C" scale sound level.

The COGCC Rule 423.b(2)B. regulation states the following in regard to "C" weighted data:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

B. *In all zones maximum permissible noise levels will be 65 db(C) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(C) in the hours between 7:00 a.m. to 7:00 p.m.*

In situations where the dBC ambient sound levels already exceed the Rule 423.b.(2)B. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in Rule 423d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

In reviewing the "C" weighted data indicated on Table 1, Figure 3, and Figure 4, and based on the measurements obtained by ENRG during the 72-hour ambient sound level survey, approximately 39 hours (54.2% of the time) exceeded the 65.0 dBC allowable and therefore do not meet the COGCC's 423.b.(2)B. regulation 100% of the time. As shown on Table 1, ENRG and Civitas have measured and reported a 72-hour ambient sound level of 66.2 dBC, a 36-hour daytime ambient sound level of 67.2 dBC, and a 36-hour nighttime ambient sound level of 65.1 dBC.

Based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 67.2 dBC, which resulted in an +7 dBC adjusted allowable of 74.2 dBC (67.2 + 7) for daytime hours. Further, it is ENRG's opinion based on the results of the ambient study that the COGCC daytime adjusted allowable of 74.2 dBC was met 100% (36 hours) of the time. Because the 36-hour nighttime ambient average was 65.1 dBC, which is above the 65. dBC allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington -South location to 70.1 dBC (65.1 + 5). It is ENRG's opinion based on the results of the ambient study that the COGCC nighttime adjusted allowable of 70.1 dBC was met 97.2% (35 hours) of the time. The adjusted daytime and nighttime dBC allowables are shown on Figure 5.

Conclusions

It is ENRG's opinion based on the 72-hour ambient sound level results measured at the Washington - South location from March 31 – April 2, 2022 that the COGCC daytime allowable of 65.0 dBA was met 100% of the time and the 60.0 dBA nighttime allowable was met 94.4% of the time as indicated above, as well as, on Table 1, Figure 3, and Figure 4. Additionally, based on the ambient dBC results measured, it is ENRG's opinion that the adjusted daytime allowable of 74.2 dBC was met 100% of the time, and the adjusted nighttime allowable of 70.1 dBC was met 97.2% of the time. Taking into account the proposed mitigation and the proximity of the closest Residential Building Units for the Washington - South, it ENRG's opinion that both the dBA and the dBC allowables can be met 100% of the time. Please keep in mind that the study takes into account any potential location sound, as well as, any sound from sources surrounding the location including air traffic, highway traffic, and wildlife to name a few. As a reminder, Civitas was not performing any onsite drilling or completion activities during the time of the study.

Please call or email us at the information below if you have any questions or comments.

Sincerely,

Chrystie Carter
chrystie@enrgconsultants.com
214-435-6799 cell

Todd H. Boring
todd@enrgconsultants.com
214-674-3762 cell

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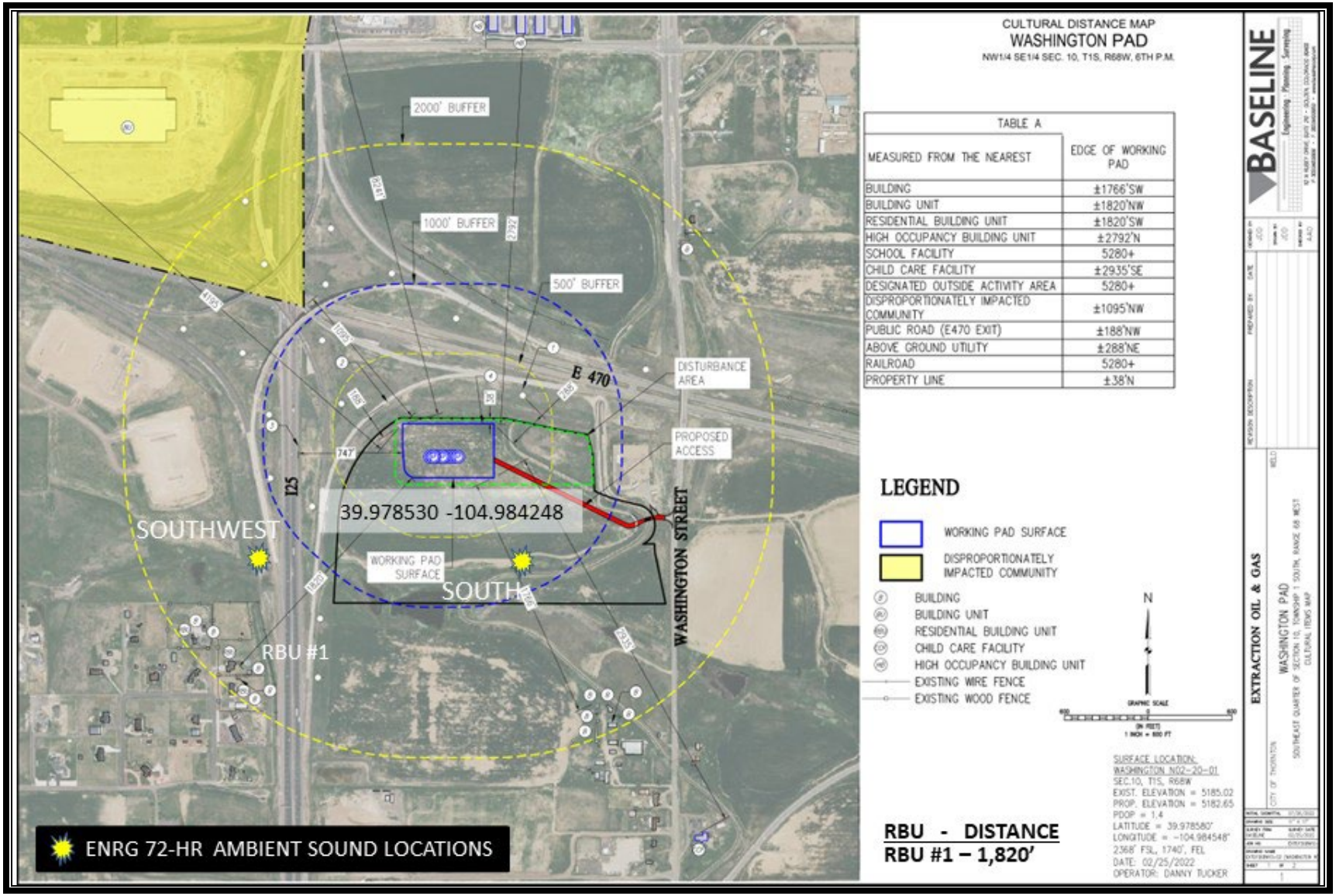

FIGURE 1. CIVITAS – WASHINGTON PADSITE
NOISE MONITORING TERMINAL (NMT) LOCATION
WASHINGTON - SOUTH

FIGURE 2. CIVITAS – WASHINGTON PADSITE
NOISE MONITORING TERMINAL (NMT) LOCATION
WASHINGTON - SOUTH

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTH
72-HOUR AMBIENT SOUND LEVEL AVERAGES
MARCH 31, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	53.1	45.0	65.7	63.3	
1:00-1:59	53.4	41.8	74.4	62.5	
2:00-2:59	51.0	42.6	66.2	62.0	
3:00-3:59	53.6	44.7	64.1	63.8	Nighttime Range
4:00-4:59	56.3	46.3	70.8	65.8	
5:00-5:59	61.1	53.5	70.3	68.7	
6:00-6:59	64.0	60.0	70.4	71.3	
7:00-7:59	64.9	61.9	84.0	71.9	
8:00-8:59	59.6	51.3	68.0	69.9	
9:00-9:59	50.0	45.0	64.2	66.9	
10:00-10:59	48.4	43.5	64.2	66.9	
11:00-11:59	47.6	42.4	70.9	67.2	
12:00-12:59	47.9	42.5	67.5	67.2	Daytime Range
13:00-13:59	47.6	42.4	68.3	68.0	
14:00-14:59	46.8	41.0	69.7	65.7	
15:00-15:59	48.9	42.1	65.6	66.5	
16:00-16:59	49.7	42.5	73.0	66.1	
17:00-17:59	52.3	45.1	66.0	66.2	
18:00-18:59	54.7	47.1	64.4	64.8	
19:00-19:59	54.1	47.2	65.0	64.1	
20:00-20:59	54.4	49.1	64.0	64.4	
21:00-21:59	54.1	47.1	63.9	64.1	Nighttime Range
22:00-22:59	53.3	46.3	67.2	63.4	
23:00-23:59	53.6	43.3	62.5	63.0	

24-Hr LAeq	**56.7**
12-Hr Daytime LAeq	**56.2**
12-Hr Nighttime LAeq	**57.2**

24-Hr LCeq	**66.9**
12-Hr Daytime LCeq	**67.7**
12-Hr Nighttime LCeq	**66.0**

TABLE 1 - Pg. 1 OF 3

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTH
72-HOUR AMBIENT SOUND LEVEL AVERAGES
APRIL 1, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	51.4	41.5	64.9	62.1	
1:00-1:59	49.4	38.8	63.2	61.7	
2:00-2:59	51.2	42.2	63.6	62.1	
3:00-3:59	51.8	43.0	62.8	61.2	
4:00-4:59	52.6	46.0	60.9	62.4	
5:00-5:59	57.8	51.2	66.9	66.4	
6:00-6:59	58.3	52.7	69.8	67.0	Nighttime Range
7:00-7:59	58.0	52.5	69.5	68.2	
8:00-8:59	57.2	52.5	64.7	70.5	
9:00-9:59	56.3	52.5	73.4	68.7	
10:00-10:59	55.6	48.0	69.6	69.2	
11:00-11:59	54.9	47.3	74.5	68.2	
12:00-12:59	49.3	45.4	64.3	66.3	
13:00-13:59	51.8	45.5	73.4	68.4	
14:00-14:59	51.7	44.8	67.1	68.6	
15:00-15:59	53.6	47.8	66.0	67.6	
16:00-16:59	52.3	46.9	62.8	66.2	
17:00-17:59	51.5	45.6	66.5	65.0	
18:00-18:59	53.8	46.5	76.2	64.7	Daytime Range
19:00-19:59	55.1	49.4	72.0	64.3	
20:00-20:59	54.5	49.6	70.4	64.2	
21:00-21:59	53.1	48.8	65.4	62.9	
22:00-22:59	52.6	48.3	61.5	62.8	
23:00-23:59	53.5	46.3	63.7	63.1	Nighttime Range

24-Hr LAeq	**54.4**
12-Hr Daytime LAeq	**54.5**
12-Hr Nighttime LAeq	**54.2**

24-Hr LCeq	**66.6**
12-Hr Daytime LCeq	**67.9**
12-Hr Nighttime LCeq	**64.8**

TABLE 1 - Pg. 2 OF 3

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTH
72-HOUR AMBIENT SOUND LEVEL AVERAGES
APRIL 2, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	56.3	49.2	68.2	64.1	Nighttime Range
1:00-1:59	54.1	44.6	66.4	63.2	
2:00-2:59	52.4	44.2	61.9	62.8	
3:00-3:59	49.8	39.8	62.1	61.2	
4:00-4:59	52.3	44.7	62.3	63.4	
5:00-5:59	56.2	50.2	65.6	65.2	
6:00-6:59	58.5	52.6	70.7	67.0	
7:00-7:59	59.5	55.5	68.6	67.3	Daytime Range
8:00-8:59	56.2	50.2	71.5	66.7	
9:00-9:59	53.7	47.6	68.4	66.5	
10:00-10:59	51.8	47.9	68.6	66.1	
11:00-11:59	51.2	47.2	70.3	65.8	
12:00-12:59	49.8	45.2	67.9	65.1	
13:00-13:59	49.0	44.4	73.0	64.2	
14:00-14:59	49.0	44.4	67.3	64.1	
15:00-15:59	48.6	43.2	72.9	64.6	
16:00-16:59	49.3	44.3	60.6	64.2	
17:00-17:59	48.5	43.3	64.0	63.9	
18:00-18:59	52.2	43.9	68.2	63.9	
19:00-19:59	53.5	46.9	64.7	64.5	Nighttime Range
20:00-20:59	54.8	49.1	65.0	64.4	
21:00-21:59	55.7	47.1	70.3	64.2	
22:00-22:59	58.1	50.9	85.8	65.2	
23:00-23:59	54.9	47.2	67.4	63.4	

24-Hr LAeq	**54.4**
12-Hr Daytime LAeq	**53.1**
12-Hr Nighttime LAeq	**55.3**
72-Hour LAeq Average	**55.3**
36-Hour LAeq Daytime	**54.8**
36-Hour LAeq Nighttime	**55.7**
dBA Allowable Noise Level	**65.0 - Daytime 60.0 - Nighttime**

24-Hr LCeq	**64.9**
12-Hr Daytime LCeq	**65.4**
12-Hr Nighttime LCeq	**64.3**
72-Hour dBC Average (Leq)	**66.2**
36-Hour LCeq Daytime	**67.2**
36-Hour LCeq Nighttime	**65.1**
dBC Adj. Allowable Noise Level	**74.2 - Daytime 70.1 - Nighttime**

TABLE 1 - Pg. 3 OF 3

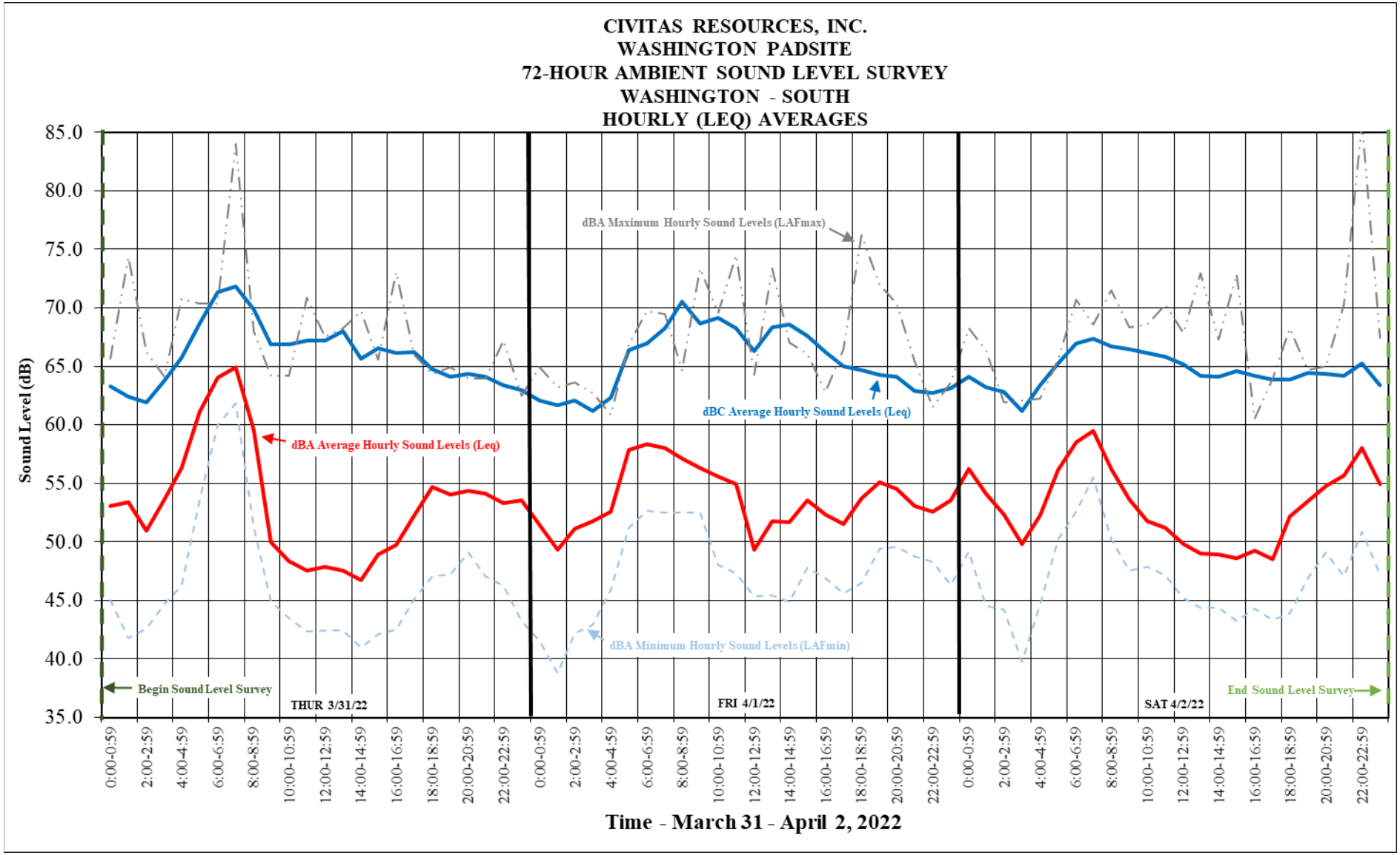

FIGURE 3. CIVITAS – WASHINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTH METER
dBA & dBC AVERAGE SOUND LEVELS (Leq)

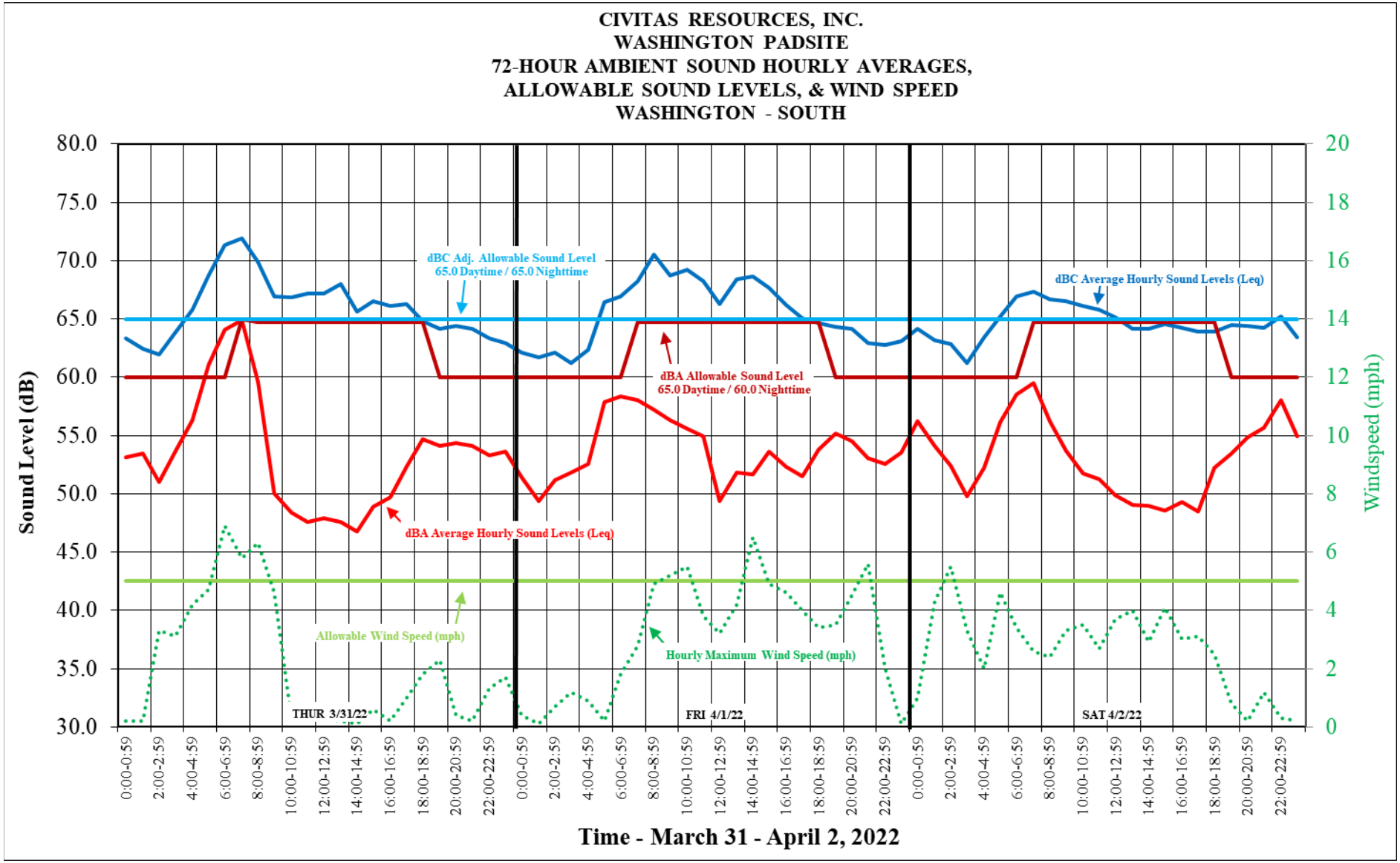

FIGURE 4. CIVITAS – WASHINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTH METER
dBA & dBC HOURLY AVERAGE (Leq) & ALLOWABLE SOUND LEVELS WITH WIND

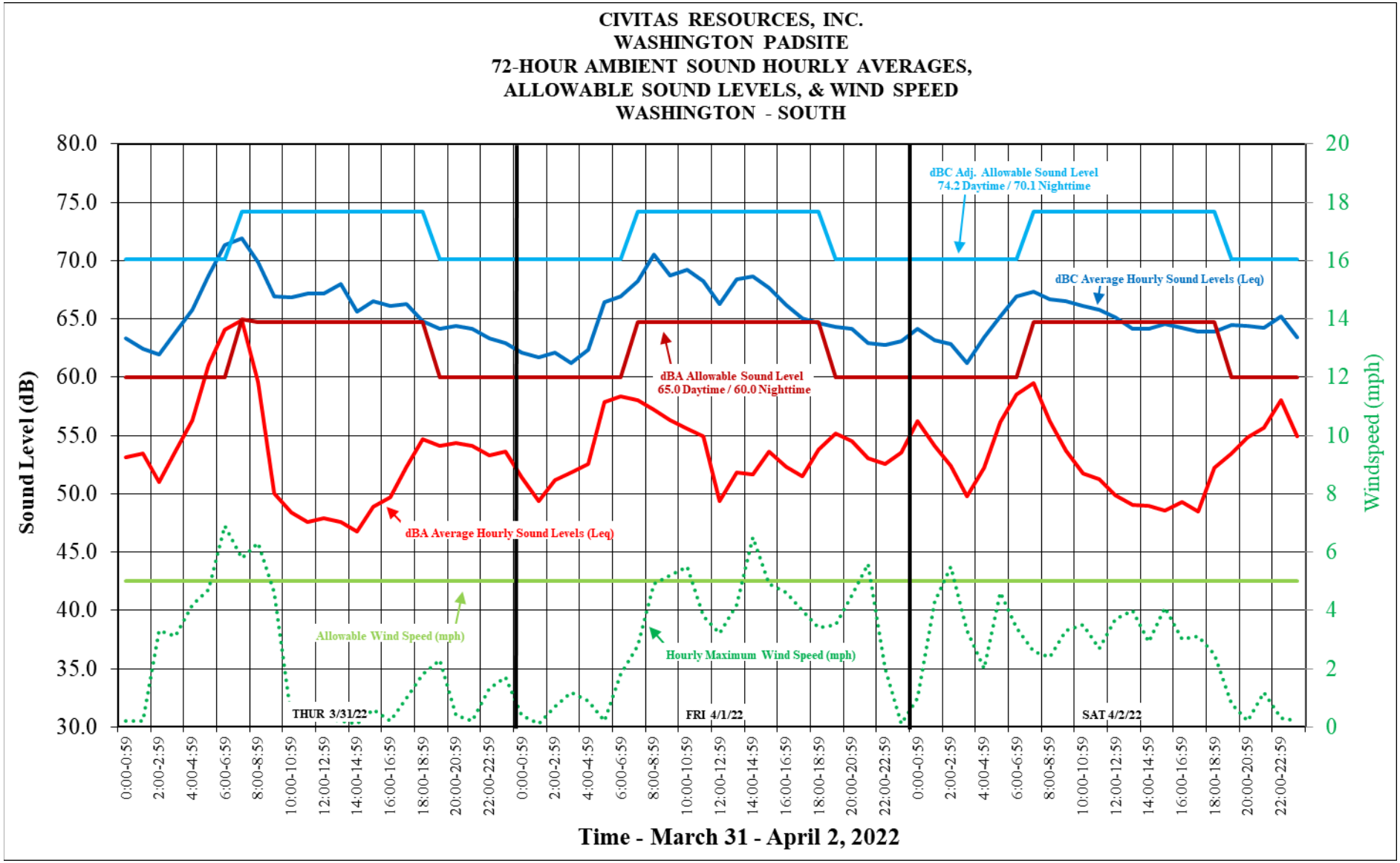

FIGURE 5. CIVITAS – WASINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTH METER
dBA & dBC HOURLY AVERAGE (Leq) & ADJUSTED ALLOWABLE SOUND LEVELS WITH WIND

May 24, 2022

Civitas Resources, Inc.
Attn: Mr. Claude Boiteau
Asset Development
555 17th Street #3500
Denver, Colorado 80202

RE: CIVITAS RESOURCES, INC. – WASHINGTON PADSITE
72-HOUR PRE-DRILLING AMBIENT SOUND LEVEL SURVEY
WASHINGTON – SOUTHWEST AMBIENT LOCATION

Dear Mr. Boiteau:

Per your request, the Environmental and Natural Resources Group Inc. (ENRG) performed a 72-hour pre-drilling ambient sound level survey for Extraction Oil &Gas Inc, a wholly owned subsidiary of Civitas Resources, Inc. (Civitas), in the vicinity of the proposed Washington Pad and future drilling location from March 31 – April 2, 2022. Figure 1 shows the location where the ambient sound level survey was conducted, referred to as Washington - Southwest. This sound level survey was performed to conform to the Colorado Oil and Gas Conservation Commission's (COGCC) 400-Series regulations governing "Operations and Reporting", specifically Rule 423, adopted January 15, 2021.

The Washington Pad is located at approximately Latitude 39.978530 Longitude -104.984248 (Figure 1). According to Google Earth maps and visual observation, the proposed pad is located east of Interstate 25 and south of Northwest Parkway (E470) within the city limits of Thornton, (Adams County) Colorado (NWSE, Sec 10 T1S R68W). The City of Thornton identifies the parcels containing the Washington Pad as zoned "Planned Development" with an intended future land use designation of "Employment Center – Warehouse Overlay". The surrounding properties are primarily utilized for farming/ranching, oil and gas, and commercial or residential development. Land or properties within ¼ mile of the Washington Pad consists of relatively undisturbed uplands. The proposed well site consists of an active agricultural field.

ENRG's Noise Monitoring Terminal (NMT), which is equipped with a Type I Bruel & Kjaer (B&K) 2250 sound level meter, was calibrated, programmed for dBA and dBC frequencies and installed at the Washington - Southwest ambient location by ENRG personnel before 0:00 on Thursday, March 31, 2022. Initial and final readings were verified with a calibration device to ensure accuracy during and after the test. The objective was to measure and document the site's ambient sound levels until 23:59 on Saturday, April 2, 2022. The NMT was located approximately 1,450 feet southwest from the edge of the proposed drilling location and approximately 650 feet northwest from the nearest residential building unit boundary (Figure 1). The Washington - Southwest NMT was placed where no obstructions were allowed to block the meter from measuring and recording accurate ambient sound levels (Figure 2). One other 72-hour ambient sound level survey was conducted simultaneously with the Washington - Southwest, referred to as the Washington - South. The results of the Washington -

South ambient survey are included in a separate report. The Washington - South and Washington - Southwest locations are shown in Figure 1.

Summary

The results of the 72-hour ambient sound levels are attached as Table 1, Figure 3, and Figure 4. A summary of the 72-hour sound level averages is shown on Table 1. Figure 3 shows the graphical results of the minimum, maximum, and average of the 72-hour sound levels. Figure 4 indicates the 72-hour dBA and dBC average sound levels, allowable sound levels, maximum hourly wind levels and allowable wind levels.

The Leq results of the 72-hour ambient sound levels are summarized below:
72-hour ambient sound level – 65.4 dBA and 73.0 dBC
36-hour daytime ambient sound level – 66.3 dBA and 74.3 dBC
36-hour nighttime ambient sound level – 64.2 dBA and 71.3 dBC

A- Scale Allowables

As shown above and on Table 1, ENRG and Civitas have measured and reported a 72-hour ambient sound level of 65.4 dBA, a 36-hour daytime ambient sound level of 66.3 dBA, and a 36-hour nighttime ambient sound level of 64.2 dBA. In reviewing the "A" weighted data indicated on Table 1, Figure 3, and Figure 4, and based on the measurements obtained by ENRG during the 72-hour ambient sound level survey, approximately 22 hours (61.1% of the time) exceeded the 65.0 dBA daytime allowable and approximately 27 hours (75.0% of the time) exceeded the 60.0 dBA nighttime allowable and therefore do not meet the COGCC's 423.b.(2)B. regulation 100% of the time.

In situations where the dBA ambient sound levels already exceed the 423.b.(2)B. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in 423d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

As discussed and referenced in the regulation excerpt above, based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 66.3 dBA,

which resulted in an +7 dBA adjusted allowable of 73.3 dBA (66.3 + 7) for daytime hours. Further, it is ENRG's opinion based on the results of the ambient study that the COGCC daytime adjusted allowable of 73.3 dBA was met 100% (36 hours) of the time. Because the 36-hour nighttime ambient average was 64.2 dBA, which is above the 60.0 dBA allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington - Southwest location to 69.2 dBA (64.2 + 5). It is ENRG's opinion based on the results of the ambient study that the COGCC nighttime adjusted allowable of 69.2 dBA was met 100% (36 hours) of the time. The adjusted daytime and nighttime dBA allowables are shown on Figure 5.

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

A. *In Residential/Rural or Commercial/Agricultural, maximum permissible noise levels will be 60 db(A) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(A) in the hours between 7:00 a.m. to 7:00 p.m.;*

The regulations go on to state the following:

(6) *Unless otherwise required by Rule 423.b.(7), during the hours between 7:00 a.m. and the next 7:00 p.m. the maximum permissible noise levels listed in Table 423-1 may be increased 10 dB(A) for a period not to exceed 15 minutes in any 1-hour period. The increase is permissible only for a 1 - hour period during any 12 hours.*

The above regulation permits the allowable of 73.3 dBA during daytime hours to be increased to 83.3 dBA for a period of 15 minutes in any 1-hour period not to exceed a total of 60 minutes during the course of any 12-hour daytime period.

C - Scale Allowables

As part of the COGCC Rule 423.b. requirement regarding ambient sound studies, ENRG and Civitas have measured and reported a 72-hour ambient "C" scale sound level.

The COGCC Rule 423.b(2)B. regulation states the following in regard to "C" weighted data:

(2) *Unless otherwise required by Rule 423, drilling or completion operations, including Flowback:*

B. *In all zones maximum permissible noise levels will be 65 db(C) in the hours between 7:00 p.m. to 7:00 a.m. and 65 db(C) in the hours between 7:00 a.m. to 7:00 p.m.*

In situations where the dBC ambient sound levels already exceed the Rule 423.b.(2)B. regulation above, the COGCC provides a solution for calculating a sound level allowable that takes in to account those ambient levels, as delineated in Rule 423d. CUMULATIVE NOISE (1) and (2) which are shown below:

(1) *Noise measurements taken at noise points of compliance designated pursuant to Rule 423.a.(5) will take into account ambient noise, rather than solely the incremental increase of noise from the facility targeted for measurement.*

(2) *At new or substantially modified Oil and Gas Locations where ambient noise levels at noise points of compliance designated pursuant to Rule 423.a.(5) already exceed the noise thresholds identified in Table 423-1, then Operators will be considered in compliance with Rule 423, unless at any time their individual noise contribution, measured pursuant to Rule 423.c, increases noise above ambient levels by greater than 5 dBC and 5 dBA between 7:00 p.m. and 7:00 a.m. or 7 dBC and 7 dBA between 7:00 a.m. and 7:00 p.m. This Rule 423.d.(2) does not allow Operators to increase noise above the maximum cumulative noise thresholds specified in Table 423-2 after the Commencement of Production Operations.*

In reviewing the "C" weighted data indicated on Table 1, Figure 3, and Figure 4, and based on the measurements obtained by ENRG during the 72-hour ambient sound level survey, approximately 72 hours (100% of the time) exceeded the 65.0 dBC allowable and therefore do not meet the COGCC's 423.b.(2)B. regulation 100% of the time. As shown on Table 1, ENRG and Civitas have measured and reported a 72-hour ambient sound level of 73.0 dBC, a 36-hour daytime ambient sound level of 74.3 dBC, and a 36-hour nighttime ambient sound level of 71.3 dBC.

Based on the ambient data and pursuant to 423.d.(2), ENRG applied the appropriate increase to the daytime ambient sound level of 74.3 dBC, which resulted in an +7 dBC adjusted allowable of 81.3 dBC (74.3 + 7) for daytime hours. Further, it is ENRG's opinion based on the results of the ambient study that the COGCC daytime adjusted allowable of 81.3 dBC was met 100% (36 hours) of the time. Because the 36-hour nighttime ambient average was 71.3 dBC, which is above the 65.0 dBC allowable, ENRG is proposing a +5 dBC increase to the nighttime allowable for the Washington - Southwest location to 76.3 dBC (71.3 + 5). It is ENRG's opinion based on the results of the ambient study that the COGCC nighttime adjusted allowable of 76.3 dBC was met 100% (36 hours) of the time. The adjusted daytime and nighttime dBC allowables are shown on Figure 5.

Conclusions

It is ENRG's opinion based on the 72-hour ambient sound level results measured at the Washington - Southwest location from March 31 – April 2, 2022 that the COGCC adjusted daytime allowable of 73.3 dBA was met 100% of the time and the 69.2 dBA adjusted nighttime allowable was met 100% of the time as indicated above, as well as, on Table 1, Figure 3, Figure 4, and Figure 5. Additionally, based on the ambient dBC results measured, it is ENRG's opinion that the adjusted daytime allowable of 81.3 dBC was met 100% of the time, and the adjusted nighttime allowable of 76.3 dBC was met 100% of the time. Taking into account the proposed mitigation and the proximity of the closest Residential Building Units for the Washington - Southwest, it ENRG's opinion that both the dBA and the dBC adjusted allowables can be met 100% of the time. Please keep in mind that the study takes into account any potential location sound, as well as, any sound from sources surrounding the location including air traffic, highway traffic, and wildlife to name a few. As a reminder, Civitas was not performing any onsite drilling or completion activities during the time of the study.

Please call or email us at the information below if you have any questions or comments.

Sincerely,

Chrystie Carter
chrystie@enrgconsultants.com
214-435-6799 cell

Todd H. Boring
todd@enrgconsultants.com
214-674-3762 cell

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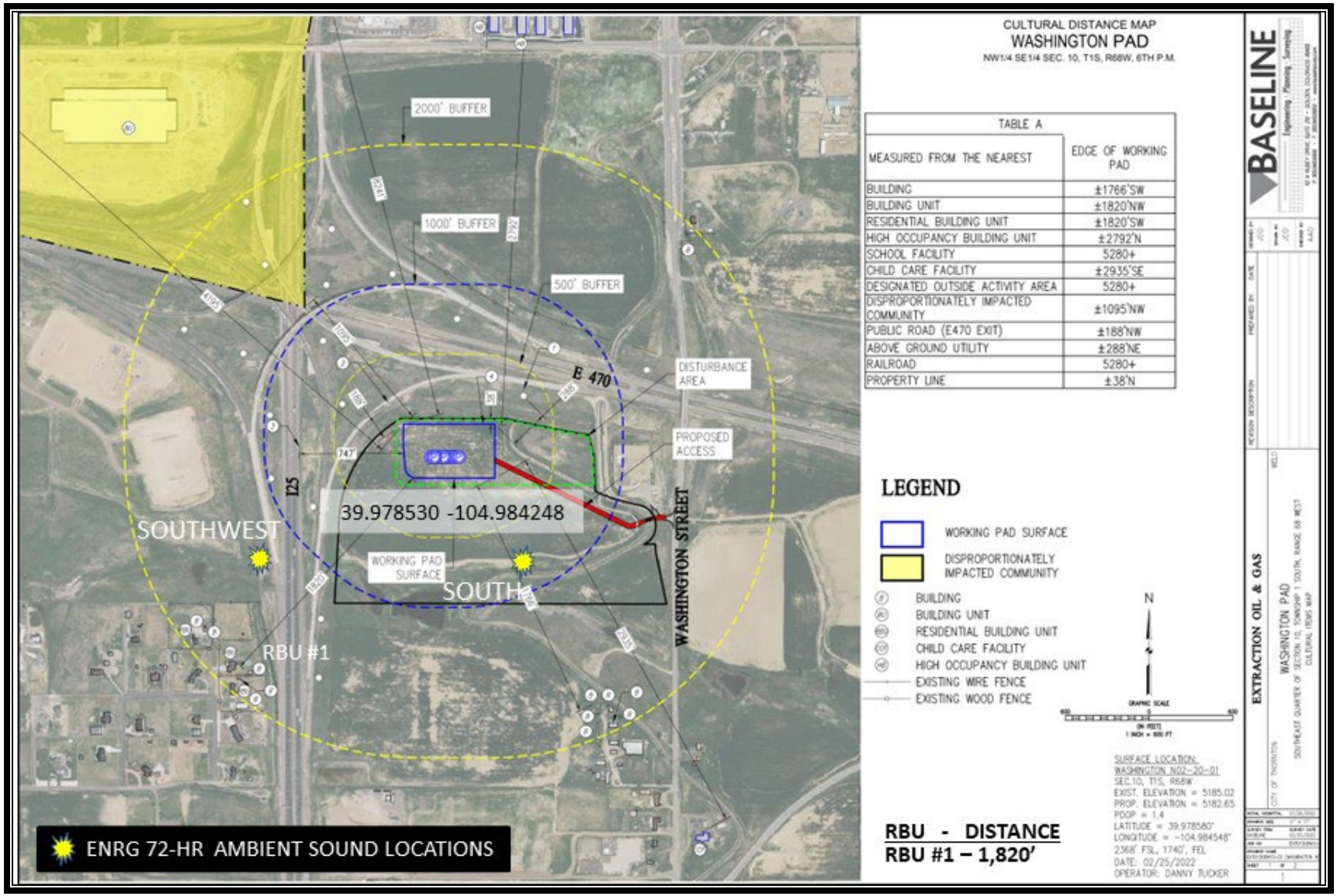

FIGURE 1. CIVITAS – WASHINGTON PADSITE
NOISE MONITORING TERMINAL (NMT) LOCATION
WASHINGTON - SOUTHWEST

FIGURE 2. CIVITAS – WASHINGTON PADSITE
NOISE MONITORING TERMINAL (NMT) LOCATION
WASHINGTON - SOUTHWEST

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTHWEST
72-HOUR AMBIENT SOUND LEVEL AVERAGES
MARCH 31, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	59.7	42.8	71.4	67.6	Nighttime Range
1:00-1:59	59.3	42.0	73.5	67.0	
2:00-2:59	60.2	41.4	76.3	67.6	
3:00-3:59	60.1	45.5	73.5	68.2	
4:00-4:59	62.7	49.5	74.4	71.6	
5:00-5:59	66.9	57.9	76.4	73.5	
6:00-6:59	69.6	63.1	87.1	75.8	
7:00-7:59	70.2	65.7	78.7	76.1	Daytime Range
8:00-8:59	67.5	60.3	77.6	75.0	
9:00-9:59	66.1	58.0	74.6	74.3	
10:00-10:59	65.8	54.4	74.8	74.3	
11:00-11:59	64.2	54.9	73.2	74.2	
12:00-12:59	63.5	51.0	80.5	74.0	
13:00-13:59	65.7	55.5	76.3	74.5	
14:00-14:59	65.7	56.6	75.3	74.6	
15:00-15:59	66.0	53.9	75.5	74.9	
16:00-16:59	67.4	61.4	80.9	74.7	
17:00-17:59	67.3	61.3	76.9	74.7	
18:00-18:59	66.8	59.1	84.7	73.6	
19:00-19:59	64.9	56.8	76.0	72.1	Nighttime Range
20:00-20:59	65.6	55.6	81.7	72.0	
21:00-21:59	65.2	54.4	75.7	71.5	
22:00-22:59	60.8	49.2	74.5	68.7	
23:00-23:59	59.3	45.6	76.1	67.4	

24-Hr LAeq	**65.6**
12-Hr Daytime LAeq	**66.7**
12-Hr Nighttime LAeq	**64.2**

24-Hr LCeq	**73.2**
12-Hr Daytime LCeq	**74.6**
12-Hr Nighttime LCeq	**71.2**

TABLE 1 - Pg. 1 OF 3

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTHWEST
72-HOUR AMBIENT SOUND LEVEL AVERAGES
APRIL 1, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	61.1	44.8	83.7	68.9	Nighttime Range
1:00-1:59	58.1	42.3	72.7	68.4	
2:00-2:59	56.3	42.7	68.4	68.6	
3:00-3:59	60.1	45.0	71.0	69.7	
4:00-4:59	62.1	50.9	74.7	70.4	
5:00-5:59	66.0	54.8	74.7	73.1	
6:00-6:59	68.9	62.5	82.4	75.5	
7:00-7:59	69.3	64.4	79.7	75.6	Daytime Range
8:00-8:59	69.9	63.4	80.2	76.5	
9:00-9:59	69.6	62.1	76.5	76.2	
10:00-10:59	65.2	51.8	76.6	74.8	
11:00-11:59	60.3	50.5	74.8	73.6	
12:00-12:59	63.7	54.1	77.3	74.3	
13:00-13:59	64.7	53.5	78.6	74.4	
14:00-14:59	66.8	55.8	78.2	75.3	
15:00-15:59	68.1	58.8	79.1	75.6	
16:00-16:59	68.5	59.4	80.1	75.4	
17:00-17:59	68.0	61.4	84.7	75.3	
18:00-18:59	67.7	62.5	78.2	73.8	
19:00-19:59	68.4	60.6	77.7	74.2	Nighttime Range
20:00-20:59	66.2	56.1	82.1	73.7	
21:00-21:59	64.7	55.4	75.7	71.5	
22:00-22:59	62.4	53.4	77.4	71.0	
23:00-23:59	64.2	53.5	83.4	70.4	

24-Hr LAeq	**66.3**
12-Hr Daytime LAeq	**67.5**
12-Hr Nighttime LAeq	**64.7**

24-Hr LCeq	**73.8**
12-Hr Daytime LCeq	**75.2**
12-Hr Nighttime LCeq	**71.9**

TABLE 1 - Pg. 2 OF 3

TABLE 1
CIVITAS RESOURCES, INC.
WASHINGTON PADSITE
WASHINGTON - SOUTHWEST
72-HOUR AMBIENT SOUND LEVEL AVERAGES
APRIL 2, 2022

Time	Average dBA/Hr (Leq)	Minimum dBA/Hr (LAFmin)	Maximum dBA/Hr (LAFmax)	Average dBC/Hr (Leq)	
0:00-0:59	60.7	47.9	72.6	68.4	
1:00-1:59	60.3	49.4	77.6	68.6	
2:00-2:59	58.7	46.0	76.9	68.2	
3:00-3:59	58.8	40.4	74.9	67.6	Nighttime Range
4:00-4:59	59.1	46.7	71.5	68.4	
5:00-5:59	57.8	49.6	76.3	68.7	
6:00-6:59	62.9	53.8	87.2	72.0	
7:00-7:59	61.2	52.9	76.9	72.2	
8:00-8:59	58.9	51.3	71.0	72.0	
9:00-9:59	60.2	52.1	83.0	72.8	
10:00-10:59	61.0	51.6	78.8	72.5	
11:00-11:59	62.2	52.3	78.8	72.8	
12:00-12:59	64.6	53.8	74.5	72.8	Daytime Range
13:00-13:59	62.8	53.4	72.3	72.1	
14:00-14:59	65.0	56.3	80.2	72.6	
15:00-15:59	66.5	58.9	77.7	73.5	
16:00-16:59	67.0	60.0	83.2	73.6	
17:00-17:59	64.5	52.7	77.3	72.0	
18:00-18:59	66.0	57.9	77.6	72.4	
19:00-19:59	65.5	54.8	75.9	72.6	
20:00-20:59	68.1	57.4	88.8	73.2	
21:00-21:59	66.4	57.7	81.2	72.4	Nighttime Range
22:00-22:59	66.6	55.7	93.0	71.8	
23:00-23:59	62.6	50.9	79.4	69.2	

24-Hr LAeq	**63.8**
12-Hr Daytime LAeq	**64.0**
12-Hr Nighttime LAeq	**63.7**
72-Hour LAeq Average	**65.4**
36-Hour LAeq Daytime	**66.3**
36-Hour LAeq Nighttime	**64.2**
dBA Adj Allowable Noise Level	**73.3 - Adj Daytime 69.2 - Adj Nighttime**

24-Hr LCeq	**71.7**
12-Hr Daytime LCeq	**72.6**
12-Hr Nighttime LCeq	**70.6**
72-Hour dBC Average (Leq)	**73.0**
36-Hour LCeq Daytime	**74.3**
36-Hour LCeq Nighttime	**71.3**
dBC Adj. Allowable Noise Level	**81.3 - Adj Daytime 76.3 - Adj Nighttime**

TABLE 1 - Pg. 3 OF 3

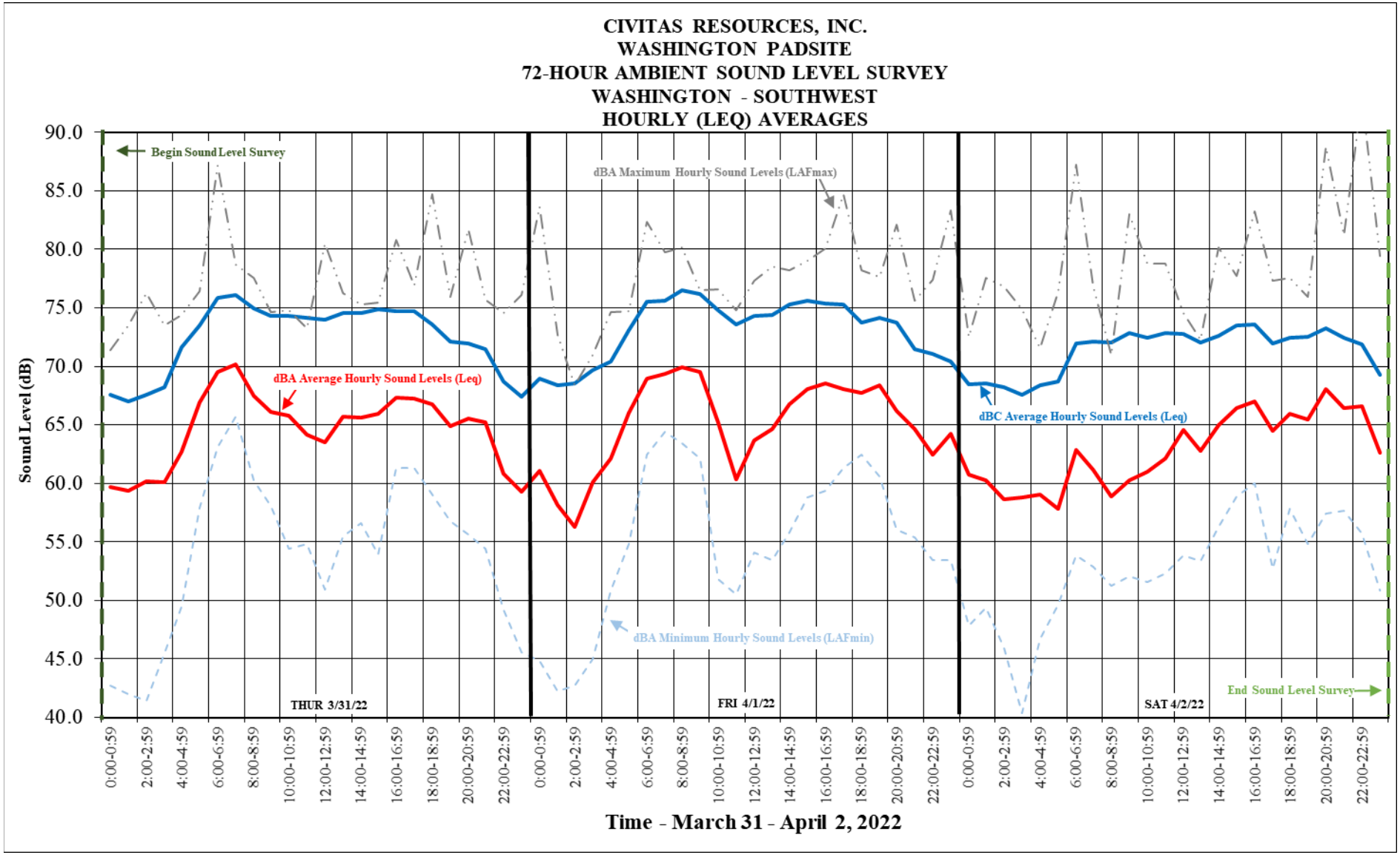

FIGURE 3. CIVITAS – WASHINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTHWEST METER
dBA & dBC AVERAGE SOUND LEVELS (Leq)

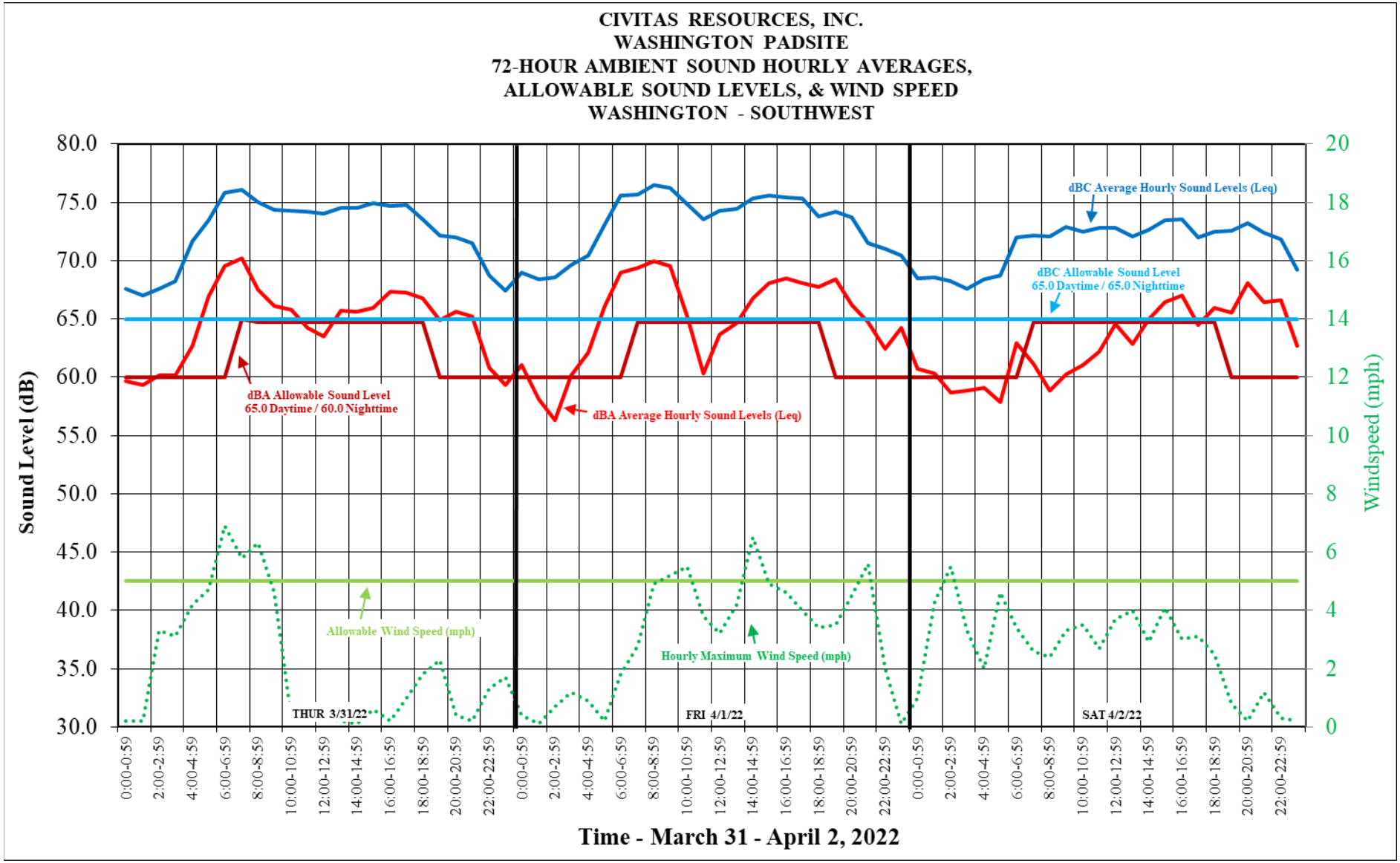

FIGURE 4. CIVITAS – WASHINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTHWEST METER
dBA & dBC HOURLY AVERAGE (Leq) & ALLOWABLE SOUND LEVELS WITH WIND

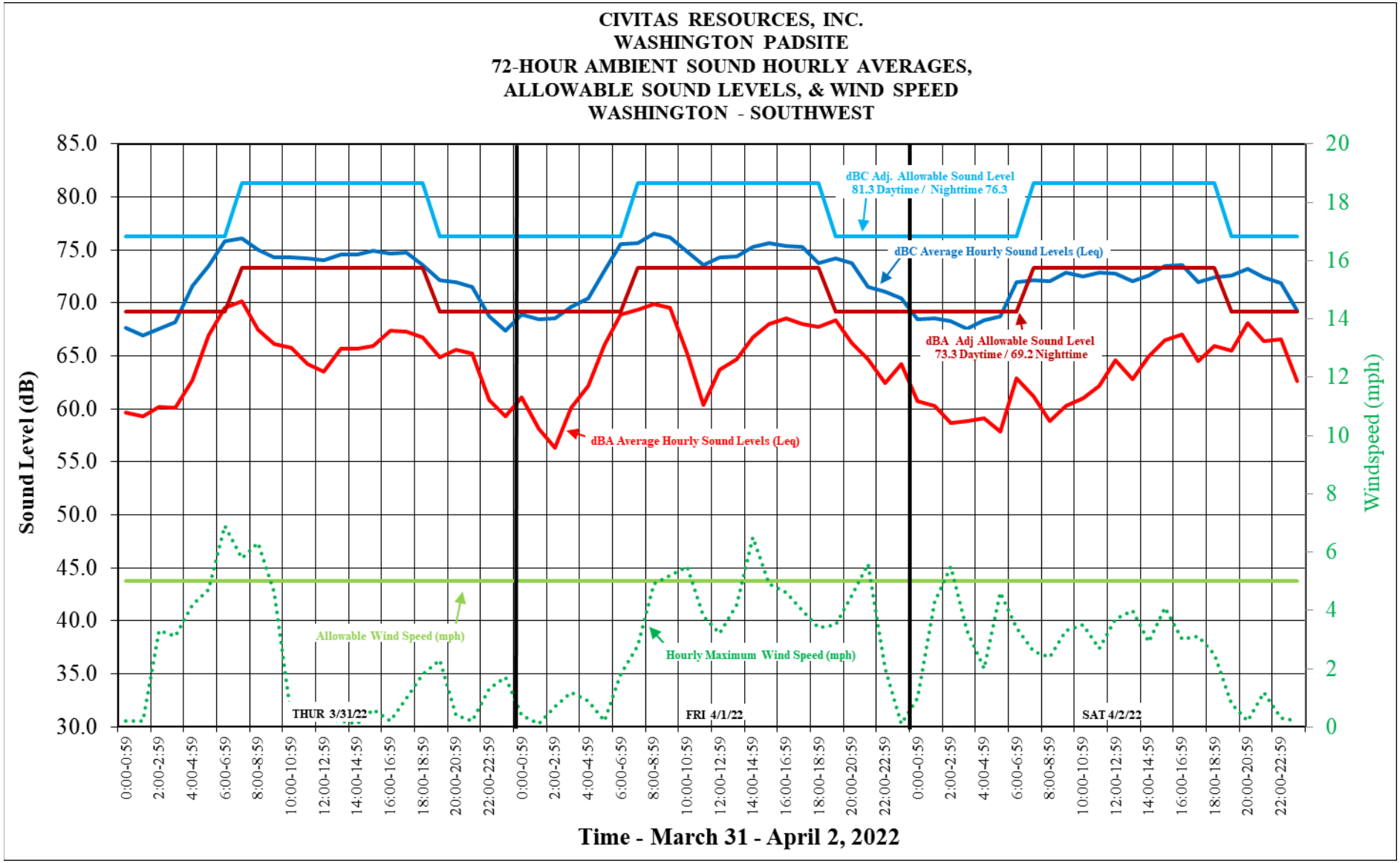

FIGURE 5. CIVITAS – WASINGTON PADSITE
72 - HOUR SOUND LEVEL SURVEY – SOUTHWEST METER
dBA & dBC HOURLY AVERAGE (Leq) & ADJUSTED ALLOWABLE SOUND LEVELS WITH WIND

EXTRACTION OIL & GAS

EXHIBIT B

BEST MANAGEMENT PRACTICES:

WASHINGTON PAD

CITY OF THORNTON, COLORADO

Latitude 39.978530 Longitude -104.984248

PREPARED BY:

ENRG
The Environmental & Natural Resources Group, Inc.

AUGUST 31, 2023

EXTRACTION OIL & GAS

Best Management Practices (BMPs)

- Idling Equipment – While idling engine/equipment, maintain at the lowest frequency possible, as well as, in a position/location that will prevent sound from carrying to nearby residents.

- Unnecessary Sounds – Unnecessary sounds such as honking the horn, revving vehicle engines, loud music, and unwarranted metal hammering/banging are all examples of sound that can create nuisance; failure to eliminate unnecessary sound from location will be subject to an internal compliance assessment if reported by a landowner.

- Sound walls will be provided by a third-party vendor. A 32' tall, STC – 32 rated acoustic paneled, engineered sound wall, or similar, will be utilized.

- The construction phase is scheduled to last, at this time, approximately 12 weeks.

- At the time of this NMP, Patterson 345 is scheduled to be utilized for the drilling of the Washington location. Patterson 345 will be equipped with highline power, instead of Tier II diesel engines, for use at the Washington location. Rigs have been designed and equipped with sound mitigating equipment including devices to minimize squeaking from the draw works brakes. The drill phase is scheduled to last, at this time, for approximately 8 weeks.

- A quiet frac fleet will be used during the completion phase. The frac is scheduled, at this time, to last for approximately 13 weeks.

- Flowback is scheduled to last, at this time, approximately 60 days.

- Production is anticipated to last, at this time, approximately 30 years.

- Ambient monitoring was conducted at the Washington - South at Latitude 39.976410 Longitude -104.982182 and the Washington – Southwest at Latitude 39.976775 Longitude -104.989645 prior to submittal of the NMP as part of the permitting process. Because there are three (3) residential building units (RBUs) within 2000 feet of permanent equipment (i.e., wells, facilities) on the Washington location, continuous monitoring will be conducted at the same locations as the ambients to ensure comparable data is collected.

- Washington South - Drilling, Completions and Flowback Allowables - At the South monitoring location ENRG and Extraction have measured and reported a 36-hour ambient sound level of 54.8 dBA during the day and 55.7 dBA at night. Therefore, based on the COGCC 423.b.(2)A. regulation, the allowable for the South ambient location will be 65.0 dBA during the day and 60.0 dBA at night. The South ambient sound levels collected near the Washington pad yielded adjusted allowable sound levels pursuant to COGCC 423.d.(1) and 423.d.(2) for "C"-scale data. During the ambient study, the 36-hour dBC daytime ambient sound level measured at the South location was 67.2 dBC, which resulted in an adjusted allowable of 74.4 dBC pursuant to COGCC regulation 423.d.(2). Further, and with reference to the regulation mentioned above, the nighttime ambient sound level measured was 65.1 dBC, which resulted in an adjusted allowable of 70.1 dBC.

- Washington South – Production Allowables - During the ambient sound level survey at the Washington - South location, the 36-hour daytime average was 54.8 dBA during the day, while the 36-hour nighttime average was 55.7 dBA. Because the daytime ambient sound level was 54.8 dBA and did not exceed the 80 dBA allowable pursuant to Table 423-1, no adjustment is being recommended at this time. Similarly, because the nighttime ambient sound level was 55.7 dBA and therefore did not exceed the allowable of 75.0 dBA dBA, no adjustment is being recommended at this time. During the ambient sound level survey at the Washington - South location, the 36-hour daytime average was 67.2 dBC during the day, while the 36-hour nighttime average was 65.1 dBC. Because the daytime average of 67.2 dBC exceeds the allowable set forth in Table 423-1, ENRG is suggesting an increase in the allowable to 74.2 dBC (67.2 + 7= 74.2) during daytime hours. Because the nighttime average of 65.1 dBC with an adjustment of + 5 dBA would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (65.1 + 5 = 70.1), the allowable during production will be capped at 70.0 dBC during the night.

- Washington Southwest – Drilling Completions and Flowback Allowables - The Southwest ambient sound levels collected near the Washington pad yielded adjusted allowable sound levels pursuant to COGCC 423.d.(1) and 423.d.(2) for "A" and "C"-scale data. At the Southwest monitoring location ENRG and Extraction have measured and reported a 36-hour ambient sound level of 66.3 dBA during the day and 64.2 dBA at night. Therefore, based on the COGCC regulation, the dBA allowable for the Southwest ambient location will be 73.3 dBA during the day and 69.2 dBA at night. During the ambient study, the 36-hour dBC daytime ambient sound level measured at the south location was 74.3 dBC, which resulted in an adjusted allowable of 81.3 dBC pursuant to COGCC regulation 423.d.(2). Further, and with

reference to the regulation mentioned above, the nighttime ambient sound level measured was 71.3 dBC, which resulted in an adjusted allowable of 76.3 dBC.

- Washington Southwest – Production Allowables - During the ambient sound level survey at the Washington - Southwest location, the 36-hour daytime average was 66.3 dBA during the day, while the 36-hour nighttime average was 64.2 dBA. Because the daytime ambient sound level was 66.3 dBA and did not exceed the 80.0 dBA allowable pursuant to Table 423-1, no adjustment is being recommended at this time. Similarly, because the nighttime ambient sound level was 66.3 dBA and therefore did not exceed the allowable of 75.0 dBA dBA, no adjustment is being recommended at this time. During the ambient sound level survey at the Washington - Southwest location, the 36-hour daytime average was 74.3 dBC during the day, while the 36-hour nighttime average was 71.3 dBC. Because the nighttime average of 74.3 dBC with an adjustment of + 7 dBA would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (74.3 + 7 = 81.3), the allowable during production will be capped at 75.0 dBC during the day. Similarly, because the nighttime ambient average of 71.3 with an adjustment of +5 would increase the allowable to above the maximum cumulative allowable described in Table 423-2 (71.3 + 5 + 76.3), the allowable will be capped at 70.0 dBC for nighttime hours.