This reasonable alternative will be considered during the rulemaking process.

A "severe problem" would generally be defined by the operator. The problem is severe when he judges the cost and/or technical difficulty would make continued drilling inadvisable.

The basis for this comment cannot be found in the referenced sentence.

The casing cut-off requirement should not be restricted to actively plowed areas. Over the years, farmers commonly rotate the use of their agricultural lands.

The Department has reliable information to support the contention that several old abandoned wells have caused serious localized environmental problems. Therefore, we do not agree with the suggested change, but do agree that a change from "many" to "some" would be appropriate.

The introductory phrase gives a sense of history of the Department's regulatory program. This has been our practice throughout the text of the GEIS.

The suggested change is more technically correct, but the word "natural" was added to deliberately emphasize that the use of synthetic muds would not be appropriate.

Support for the minimum mud density and gel-shear strength requirements is noted.

The use of the word "small" is meant to convey the idea that a smaller volume plug stands a greater chance of being contaminated and creating a poor cement plug than a larger volume one. We realize that other sized plugs could also be contaminated.

The term "small" is used in the relative sense. The specifics would be determined by the operator before a particular cement job is undertaken. Commonly 5% bentonite is added to reduce shrinkage.

Although no direct reference is made in the current regulations to perforating or ripping casing, the current regulations call for a well to be plugged in such a manner as to prevent migration. With uncemented casing the only way to prevent migration is to pull, rip or perforate prior to placing cement. The material in bold type is meant for consideration in future regulations. Reasonable alternative proposals will be considered during the rulemaking process. In many cases, one conscientious attempt would be sufficient.

See response to I-153.
The suggested changes are not appropriate to the context of this paragraph.

It is understood that the State would make every possible effort to contact and inform the current operator of the need to plug the well.

Support for extending the temporary shut-in regulations to all wells regardless of commercial potential is noted.

The proposed regulations do outline generic plugging procedures for wells of different type and construction. See pages 11-22 to 11-26.

The option of increasing the plug size rather than a mandatory tag of plug location is given, but the State still has the authority to require the location of any cement plugs be verified.

The sentence is very relevant to the discussion concerning the proper abandonment of wells in the old oilfields in order to insure protection of potable water zones.

The referenced sentences are not in direct conflict.

This recommendation is in bold type on page 11-4 where it is first proposed, and again in the summary on page 11-23. It is not necessary to emphasize it repeatedly throughout discussion text. Support for the recommendation is again noted.

Even if circulation is not possible, zone isolation can be achieved with the proper placement of cement.

Although 15-foot cement plugs at the surface are currently required, this requirement is not clearly stated in the current regulations.

The shoe plug referred to in this sentence is clearly not the casing shoe plug, but the cement plug just placed across the casing shoe.
1.351 11-17, Option 1. COMMENT: This is not a current regulation. IOGA DISAGREES with this option because costs would be excessive due to the need for additional equipment. Temporary surface damage would result. It is believed that there are not enough cable tool rigs in New York to make this a viable option anyway.

1.352 11-19, b, line 1, DELETE first sentence. REASON: operators are not required to rip or perforate any un cemented casing left in the hole.

1.353 11-20, line 1, DEFINE "calculated excess" as used in this context. IOGA suggests 25% excess.

1.354 11-20 c, heading of this section. DEFINE specifically what is meant by "significant brackish" water zones in this context.

1.355 11-21, d. 2nd para., line 3, Recommendation should be an option. REASON: This may not be recommended in all cases.

1.356 11-22, G. SUMMARY OF THE PROPOSED REGULATORY REQUIREMENTS COMMENT: IOGA feels that all proposed changes to regulatory requirements should have been listed in a separate appendix to the GEIS. IOGA feels that the current plugging and abandonment procedures are adequate and IOGA's suggested changes would enhance the effectiveness of these regulations.

This section is a part of the text discussion on possible options to achieve plugging objectives. It is understood that most operators will not usually choose the more expensive option, but that decision is left to the operator.

See response to I-338 and I-351.

1.353 Calculated excess in the context of this sentence refers to the cement amount which might fall into the annulus below the casing stub. Reasonable alternative proposals will be considered during the rulemaking process.

1.354 In the context of this sentence the word "brackish" could be removed or replaced with the word "saline". The word "significant" should modify "water zones". The reference is to any water zone with a measurable flow.

1.355 Reasonable alternative proposals will be considered during the rulemaking process.

See Topical Response Number 5 on Reasons for Including Proposed Regulations in the GEIS.
CHAPTER XII. OLD OIL FIELD WATERFLOOD OPERATIONS AND ENHANCED OIL RECOVERY POTENTIAL

GENERAL COMMENT on this section: The distinction should be made between primary oilfield recovery and waterflood recovery operations. Between primary oilfield recovery and waterflood recovery operations.

12-1, A, 2nd para., line 1, CHANGE phrase "5 to 30 percent" to "5 to 60 percent".

12-1, A, 2nd para., REFERENCE at end of paragraph (Van Tyne, Foster, 1980).

12-1, A, 4th para., beginning on line 7, CHANGE this section to read, "beating zones from an aquifer (water drive) and/or the force of gravity (gravity drive). In many reservoirs, only one or two recovery mechanisms may exist."

12-3, §6, CHANGE to read, "Original oil-in-place is the volume of the total pore volume occupied by oil at initial conditions."

12-5, C, 1, 2nd para., line 3, ADD phrase to sentence ending on this line to read, "however, New York oil-wet sandstone can be flooded to a residual oil saturation of 30 to 60 percent."

12-6, last para., line 4, CHANGE sentence beginning on this line to read, "anaerobic sulphate-reducing bacteria that must be eliminated often proliferate in produced waters."

12-7, line 2, CHANGE sentence beginning on this line to read, "some sulphate precipitates are relatively insoluble and are..."

12-7, line 5, CORRECT spelling to "phosphonates."

12-7, 1st full para., line 1, CHANGE "must" to "may".

12-7, 2nd full para., COMMENT on the use of the terms "open and closed". Open systems are those that typically do not seek to exclude contact of the injected fluid with air. Closed systems are designed to prevent contact of injected fluid with air. Supplemental freshwater is added even to closed systems for makeup. Produced fluid may be injected in either open or closed systems.

12-7, 2nd full para., line 6, CHANGE "more" to "different".

12-7, 3rd full para., line 3, CHANGE "production facilities" to "water handling."

12-7, 4th full para., line 1, CHANGE "should" to "may". REASON: All these tests may not be necessary, i.e., temperature is appropriate for gas wells, but not water injection wells; radioactive tracer surveys are not commonly used in this area because if there is a tubing leak it could allow the uncontrolled...
loss of radioactive material: annuli are not closed so annular pressure checks are not needed; caliper logging to ensure tubing integrity is not done because the water-in-annulus test is routinely performed as part of the federal UIC program.

I-371 12-8, 1st full para., COMMENT: Numbers quoted throughout this paragraph may not be typical for Allegheny County and the numbers may vary from well to well.

I-372 12-9, 1st full para., COMMENT: The reserve information needs to be updated. Also, if reserve figures are included in the GEIS, they will have to be updated each year. Line 10 should be DELETED as the figure cited is taken from a study done more than 10 years ago and includes all recovery methods, not just enhanced.

I-373 12-9, a, 2nd para., line 2, CHANGE sentence beginning on this line to read, "The accepted practice was to create an 8 inch hole through the unconsolidated surface deposits."

I-374 12-10, 2nd full para., line 4, DELETE sentence beginning on line 4 and REPLACE with "Stimulation methods have changed over the years in the oil and gas fields. However, nitroglycerin may be a more effective stimulation technique in certain shallow reservoirs. The transition from nitroglycerin to other stimulation techniques evolved from individual review of reservoir information and necessary fracture increases."

I-375 12-12, 1st full para., line 3, CHANGE paragraph starting with sentence beginning on this line to read, "In New York State, water is typically produced with the oil and the water cut (percentage) typically increases throughout the life of the well, when production is no longer economical, the well is plugged and abandoned. Many of the wells in the old oilfields were not plugged by modern standards. DELETE last sentence unless data can be provided to demonstrate this claim.

I-376 12-12, 2nd para., COMMENT: Although it is stated that the DEC is aware of problems, no problems are cited in this paragraph. QUESTION: What strategies are the DEC considering to end?

I-377 12-11, b, 2nd para., COMMENT: The information in this paragraph may be more appropriately given on p. 12-9 under Historical Waterflood Operations because it is not currently relevant.

I-378 12-12, b, 3rd para., line 4, COMMENT: Conversion of production wells to injection wells is not common in this area.

I-379 12-13, 3rd para., line 5, DELETE phrase, "as DMN met initial staffing requirements" and START sentence with "In 1987, ..." REASON: phrase is not relevant now.

I-370 Correction noted; change "should" to "may". Note: The reason stated by the commentator for not using radioactive tracer surveys is incorrect.

I-371 "Typical" in the context of this sentence refers to an example of a good waterflooding prospect. It is understood that these parameters vary from well to well.

I-372 Updated reserve figures are published each year in the Division's annual report. In line 9, "To date" should be changed to "In 1980" and "has been" should be changed to "was". That waterflooding was responsible for production of 14 percent of the original oil in place was taken directly from page 49 of VanTyne and Foster (1980).

I-373 Change ". . . drive a 10 inch hole . . ." to ". . . drill a 10 inch hole . . .". This comes directly from Interstate Oil Compact Commission (1955), page 4, and this reference should be added to the text.

I-374 The sentence is correct as written. The preceding sentence in the text states that nitroglycerin might be more effective in certain instances.

I-375 The suggested text change does not significantly add to the reader's understanding of waterflooding production. Proposed waterflood projects have been rejected by both the State and the EPA because of numerous improperly plugged wells on adjacent leases. The fact that improperly plugged wells exist was proven by re-entering some of the old wells.

I-376 The types of problems that can occur are described in section 4.D. of the GEIS. Although that chapter is historical in nature and the problems have lessened in severity and frequency, there is always a chance for adverse environmental impacts when outdated drilling and completion methods are used. The GEIS and the proposed regulations are part of DEC's strategy to better assure environmental protection in the oil fields. The DEC is also working on a supplemental enforcement strategy to address problems specific to the old oil fields.

I-377 Comment noted.

I-378 This is a description of the types of activities waterflood operators may undertake regardless of how common they are. The practice of converting producers to injectors is described by VanTyne and Foster (1980) as one that does occur in New York. In addition, a waterflood project recently approved by DEC staff includes plans to convert several production wells to injection wells.

I-379 The suggested change does not significantly alter the intent of this sentence. It was the increased staffing levels that enabled the Division of Mineral Resources to implement and enforce more effective casing and cementing guidelines.
12-17, 2nd full para., line 2, CHANGE to read, "by a single well pumping unit, or by jacks connected to a central power unit."

12-18, line 8, DELETE phrase, "as verified by percolation test." REASON: Percolation tests are inappropriate for artificial liners. How could a percolation test be done on a pit that's being used?

12-18, 3rd full para., line 5, DELETE sentence beginning on this line or provide data to substantiate claim. REASON: Conversion of producing wells to injection wells is uncommon today.

12-19, c, line 4, CHANGE to read, ". . . facilities has occurred among New York operators in this past."

12-19, 2nd para., line 6, CHANGE "no" to "little"; Line 7, CHANGE "however" to "can"; Line 8, CHANGE to read, "water source wells can produce . . . ."

12-19, 3rd para., line 2, CHANGE line to read, ". . . formation. This is a common practice in New York's oil fields."

12-19, 5th para., line 4, DELETE sentences beginning on this line to top of p. 12-20, line 2. REASON: This is not done in New York.

12-20, 2nd full para., line 2, ADD phrase at sentence ending on this line to read, "...used to estimate formation fracture pressure and instantaneous shut-in pressure."

12-20, 3rd full para., line 4, CHANGE "pump" to "facility".

12-21, 3, COMMENT on this section: IOGA does not believe it is accurate. Many of the existing waterfloods in NY contain wells within their boundaries that have been plugged using old techniques and the waterfloods have never experienced any difficulties even though water has been injected at several hundred to over a thousand pounds pressure into the reservoirs penetrated by these old wells. If old plugging methods were inadequate, difficulties in conducting more recent waterflood operations would have been encountered.

12-21, 3, 2nd para., DELETE the last two sentences of this paragraph beginning with "Many thousands...." REASON: These wells may not be the cause due to the low fluids levels as cited earlier in the GEIS.

12-23, E, 1, line 2, MOVE "xanthan biopolymers" to end of line 1 after "polysaccharides."

12-25, 4, ADD reference (Van Tyne, Foster, 1980) at end of both paragraphs in this section.

I-393 Descriptive field terms were used to better illustrate the equipment to the public.

I-394 The test should be performed before the pit is used.

I-395 See response to I-378.

I-396 Change the word "is" to "was."

I-397 Correction noted.

I-398 Only three operators reported the reinjection of produced waters in the 1987 Brine Survey.

I-399 These sentences describe common oil field water treatment methods which may or may not be used in New York.

I-400 The suggested addition is not appropriate.

I-401 The suggested change does not alter the intent of this sentence.

I-402 Many existing New York waterfloods do not have problems, but documentation exists that many others do or have had problems. Both statements are true.

I-403 Low fluid entry from the production zone does not preclude the possibility of commingling and contamination when fluid from other zones can enter the wellbore and raise the fluid level.

I-404 Correction noted.

I-405 Some of this information is contained in the given reference, but it was not the source.
Add the reference (Van Tyne and Foster, 1980). Correction noted.

Add the reference (Van Tyne and Foster, 1980).

Whether or not the behavior of these operators was fraudulent has no bearing on the fact that the State had no regulations to prohibit this sort of scheme.

The sentence is correct as written.

This information is not usually available before drilling the first well, but waterflooding is usually initiated after several years of primary recovery, data gathering and interpretation.

Correction noted.

The sentence would be more correct if the term health hazard was used instead of health problems. Health problems associated with the BTX components of oil have been documented in other states but not New York. The nuisance, inconvenience, and hazard caused by localized pollution in New York are well documented.

The suggested wording is unnecessary.

The GEIS is being misquoted. The flooding of these improperly plugged wells by subsurface water zones can raise the fluid level and result in contamination of freshwater zones even from depleted low pressure formations. This scenario is described on page 10-8, where the text states that this situation is "unlikely", not that it cannot occur.

Many New York wells have not passed the mechanical integrity tests.

We agree with this comment.

There are many more points of discharge than there are SPDES permits.

Infiltration into unconfined aquifers from surface brine pits has been demonstrated many times.
Reproduction of all of the documented cases of pollution is not possible in this text. Many IOGA members were present at the presentation given by DMN staff at the Oil, Gas and Solution Mining Board meeting in May 1986. Field investigations determined that of the 125 complaints received by DMN during 1985 and the first quarter of 1986, 62.4 percent were found to be related to oil and gas activities.

In the referenced case, while it was not proven that the adjacent operator was entirely responsible, such overwhelming evidence of environmental pollution was found that the operator agreed to replace the polluted water supply.

Usually benzene poisoning from inhalation or skin absorption occurs in an industrial setting. This paragraph does not state that crude oil in water wells poses an inhalation or absorption threat. Internal consumption from drinking water can also pose a threat. EPA's toxicity tests were certainly not based on one sample.

The other potential impacts referred to are detailed in the remainder of the paragraph.

Waterflooding extends the economic life of many oil fields.

Comment noted. The use of electrical power to operate these facilities will certainly decrease the emission of pollutants from the project area.

The use of better well construction standards and the proper plugging of old wells do mitigate the increased potential for pollution from these operations. In fact, well construction and plugging standards are purposely designed to mitigate any potentially adverse impacts.

The suggested change does not appreciably change the intent of this sentence.

The land use impacts of waterflooding operations are being compared to those of other oil and gas production facilities, not those of housing construction.

We agree that the air emissions from each of these individual activities are minimal, and that they do not all occur at each waterflood project, but taken collectively they can result in a measurable increase over the air emissions from standard oil and gas operations.

The UIC program does not ban the use of nitrogen for enhanced oil recovery.

The EPA UIC regulations do not address surface environmental concerns as required under New York State SEQR regulations. See response to I-22.
COMMENT: With the exception of effective relative and absolute permeability, reservoir temperatures, fluid properties, and aerial extent of reservoir, all other items in this paragraph are already required by the UIC permitting process. These parameters may be impossible to ascertain until some wells are drilled, and the necessity to report on them is arguable.

COMMENT: Regulations concerning conversion of wells for enhanced recovery purposes are already addressed under the federal UIC regulations, and duplication of requirements by the State should be avoided.

COMMENT: Waterflood spacing should be at the discretion of the operator. REASON: The operator will have more expertise than the DEC, and due to the large sums of money necessary for waterflood development, the operator will have the greatest motivation to ensure correct spacing.

COMMENT: This is not peculiar to waterflood operations.

COMMENT: Produced fluids from waterflood operations will be more dilute than those from primary production operations and therefore should be subject to less stringent regulation, not more stringent.

COMMENT: The requirement is not peculiar to secondary recovery.

COMMENT: Such a project would be totally uneconomic as the Farmersville Pool has never produced more than a few barrels of oil.

COMMENT: Waterflooding in the Bass Island trend is questionable.

COMMENT: Thermal methods are highly unlikely due to the characteristics of the oil and the formation.

Section L primarily is a summary of practices used in the old waterflooded oil fields that are in violation of current state and federal laws. The main conclusion of this section is that these practices must be eliminated. This conclusion is not subjective but based on facts gathered by DMN staff and detailed in the GEIS.

Documentation of adverse environmental impacts caused by waterflood operations exists in the Department's files.
1-441 12-44, 1st full para., line 3, DELETE sentence beginning on this line. REASON: The statement conflicts with EPA program mandates.
1-445 12-44, 3rd full para., line 2, (REFER TO P. 10-8)
1-446 12-44, 4th full para., line 1, COMMENT on "surface discharge". This is a viable, economical alternative. The State's attitude towards surface discharge of brines into streams and rivers is hypocritical. The State encourages operators to transport their water to other states in order for it to be processed properly for stream disposal, but there is not one single commercial surface discharge facility located in the State of New York for the processing of production brines.
1-447 12-44, 4th full para., line 4, COMMENT on sentence beginning on this line: It is inappropriate to include integrity of cement casing and injection string of wells among the items needing additional regulations, as this is already assured by the existing UIC regulations, and the implication is that the UIC program is inadequate.
1-448 GENERAL COMMENT ON SECTION 12: Preparation of an erosion and sedimentation control plan and submittal of a federal UIC permit should be the only supplements to the GEIS required for a site-specific environmental impact statement for a proposed waterflood project.

CHAPTER XIII. SOLUTION SALT MINING

1-449 11-3, 1st para., line 4, CHANGE "10" to "18" and "another 40" to "many more".

CHAPTER XIV. UNDERGROUND GAS STORAGE

1-450 14-2, B, 1, 3rd para., line 2, ADD phrase so that line reads"...reservoir usually consists of obtaining shut-in well pressures...".
1-451 14-6, 1st full para., line 2, QUESTION: How would DEC address potential earthquake dangers? COMMENT: No contingency for earthquakes should be necessary as it is too costly to mitigate, and it is unlikely that a earthquake will occur. Most of the fields would be developed in areas not known to be earthquake prone, anyway, since it is not in the best interests of storage field operators to develop a field that has earthquake potential.
1-452 14-7, ¶4, CLARIFY what information may be required.
1-453 14-7, 1st full para., line 1, QUESTION: Does dark print indicate regulation already in existence?

See responses to I-22, I-192, and I-224.

See responses to I-403 and I-414.

The fact that there are no brine treatment facilities located in New York is the result of decisions made by private industry based on economics, not State regulations. The Division of Mineral Resources does not regulate the siting or operation of brine treatment facilities.

See responses to I-22, I-192, and I-224.

See response to I-431.

Correction noted. Change '10' to '18' and "another 40" to "many more."

Correction noted. The suggested change is more technically correct.

Comment noted. The DEC is proposing that the operator assess the potential earthquake danger in the environmental assessment required for a new project. In most areas of the State, this would consist of a statement that there is no potential earthquake danger based on a review of pertinent literature on the subject for the project area. We concur with the commentator's conclusion that it would not be in the best interests of the storage operator (or the public) to locate a storage field in an area that has high earthquake potential.

The Department would require whatever other site-specific information might be necessary to adequately evaluate suitability of an underground reservoir for gas storage.

There is no dark print in the line referred to by the commentator. The bold type at the end of the paragraph describes an amendment to the Oil, Gas and Solution Mining Law that has not yet been incorporated into regulations.
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14-8, 1st full para., line 11, COMMENT: This is not a proposed recommendation. It is already in effect in permit conditions.

14-10, 2nd para., line 6, QUESTION: Does this constitute the definition of a "major" project?

14-10, 4th para., AGREE with recommendation. It is already being requested in permit application.

14-11, §8, CLARIFY what other data may be required.

14-11, 1st para., line 5, COMMENT: State geologist may review data, but it is hoped that information submitted by the company including its money, and which is more familiar with technical information than State Geologist, will be considered more credible reference in cases of disagreement.

14-11, 1st para., line 8, DEFINE "major" in this context.

14-14, D. GENERAL COMMENT on this section. DELETE all references to access roads in Section D. The creation of access roads in other industries is not regulated.

14-15, 2nd full para., DELETE this paragraph. REASON: Why does DEC need list of mud ingredients? It is the company's responsibility to properly dispose of wastes. Disposal now is regulated by the state Division of Hazardous and Solid Waste.

14-17, 1st full para., line 4, DISAGREE with recommendation. Definition is accomplished by operator agreement with landowner.

14-22, 1st & 2nd full para., DELETE these two paragraphs. REASON: In a $100 million project, about one-half million dollars in well equipment may be visible, plus the compressor. All lines are buried, and they will not have visual impact. Compressor stations are no more unsightly than other business buildings in New York, i.e., garages. The State's property rights should be the same as any other landowner.

14-22, 4th para., DELETE last paragraph. REASON: This falls under EPA jurisdiction.

14-23, 1a, line 3, CHANGE "0.43 to 0.51" to "0.3 to 0.7".

14-25, 2nd full para., DELETE this paragraph. REASON: The unused capacity listed is the gas which may have been withdrawn during the heating season by the storage corporation. It is not unused capacity. The GEIS should compare the maximum amount of gas in storage to the stated total capacity in order to arrive at unused capacity. On an annual basis, the volume used as of December 31 is approximately 60 days into a 150 day withdrawal season, and it would not be unlikely if the percentage was 40% of the storage season as compared with 21.5% percent shown in table on page 14-

All standard permit conditions must be formalized into regulation.

This is a proposed clarification for the term "modification of storage, capacity" as used in the law [ECL 23-1301.(b)]. For discussion of the definition of "major" with reference to underground gas storage, see responses to I-22 and I-23.

Support for this recommendation is noted.

See response to I-452.

Under current law [ECL 23-1301.1], the State Geologist must approve the suitability of a reservoir for gas storage before a permit can be granted.

See responses to I-22 and I-23.

The reference is to site-specific information that may be necessary to adequately evaluate suitability of a well for injection and/or withdrawal of natural gas or LPG.

See Topical Response Number 4 on Access Roads as Part of Project.

The Division of Solid and Hazardous Waste has deferred to the Division of Mineral Resources with regard to drilling waste. Thus, it is our responsibility to assure that this material is non-hazardous and disposed of properly.

Reclamation for waste rock disposal on-site can be required as mitigation under SEQQR.

A large project is likely to trigger SEQQR thresholds. Addressing visual and noise impacts (which we agree should be minimal) is part of the required environmental assessment under SEQQR which is already law.

Underground gas storage and LPG are not regulated by the EPA.

Most gas reservoirs are normally pressured; 0.43 to 0.52 psi/ft. of depth is the average range of normal hydrostatically pressured reservoirs nationwide. As stated in the GEIS, most New York producing formations are under pressured. According to DEC records, the initial pressure gradient range of the 21 New York gas storage fields was 0.23 to .52 psi/ft. of depth and the average for these gas storage fields was .39 psi/ft., of depth.

Correction noted. Beginning with the 1987 gas storage report, the DMN staff have calculated unused storage capacity by subtracting the maximum storage volume from the total storage capacity.
The capacity of storage fields is given in two numbers - working gas and cushion gas.

14-27. Most reservoirs do not approach a straight line function. They show a hysteresis curve. On the withdrawal side of the storage field, the curve has a tendency to dip below the straight line, and on the injection side it has a tendency to go above the straight line, while the end points may be exactly on the straight line. This is due to an effect called "coining," which requires a higher pressure for gas in the ground in a short period of time, i.e., 150 day withdrawal and 200 day injection.

14-28. The graph shown on page 14-27 is meant to illustrate the ideal relationship between gas production and reservoir pressure. We agree that in actual storage fields, the curve would deviate from the straight line as described by the commentator.

14-29. The suggested deletion is unnecessary. As pointed out in the text of the GBIS, the "calculations are not intended to pinpoint the gas losses from the reservoir but rather to qualify the storage project in terms of efficiency and environmental safety."

14-30. As stated in the text, the law [ECL 23-1301.4] requires that an annual storage report, form (85-15-2), be submitted by December 31 of each year. We are proposing that the regulation promulgated under this law allow the operator until March 31 to assemble the data. Under current regulation (6NYCRR Part 551.2(b)), a production report is required by March 31 of each year. Storage report form (85-15-2), which is more appropriate for gas storage operations, will be required in lieu of the production report form (85-15-4).

14-31. This is a standard provision in most rules and regulations to cover any unforeseen circumstances, and allow for the submission of data pertinent to a specific project which might not be included in the listing of standard data requirements.

Specific examples are detailed in the text (a through c) on pages 14-21 and 14-33. The pertinence of the comment to the cited text is not clear.

14-32. Well site restoration is required for all wells under DEC regulatory authority. 6NYCRR Part 555.5(5)(d) does allow a waiver of this requirement if it has been demonstrated to the Department that no hazard will result, and the landowner has signed an appropriate release.

14-33. See response to 1-472. Support for the requirement that gas storage operators submit an operational report summary upon termination of storage operations is noted.

See response to 1-451.
The Department supports regulatory efforts to protect gas storage operations from drilling by other operators into the storage horizon. Currently gas storage operations would be protected by permit conditions imposed on any well drilled through the storage horizon.

See response to I-21.

Table 15.1 does relate each involved agency's area of concern and level of responsibility.

Comment noted. Any individuals wishing further clarification concerning interagency coordination can contact this Department.

Support for the enactment of a State water well construction code and water well driller licensing is noted.

This paragraph is included for public information which is one of the primary responsibilities of government.

Correction noted: change the word 'will' to 'may'.

The "90 percent' figure was given as an estimate. It was based on all DEC data available at the time: the brine haulers' reports, the 1987 brine survey, and the 1986 oil and gas production report. The Department's recent analysis of 1987 brine production volumes and disposal methods revealed that 79% of reported gas-associated and Bass Island brine was used for roadspreading in New York. A very minute amount of oilfield brine from outside the old waterflooded areas was also used for roadspreading.

The source of information is DMN's brine analysis data base. The use of dashes and zeros is a standard laboratory practice. The dash means the parameter was not measured, and the zero means that it was measured and measurable amounts were not detected or recorded.

This information was compiled from the brine haulers' reports which are required yearly under DEC issued Part 364 permits. Figure 15.1 is for the year 1986, and the fact that the towns accepting brine change from year to year is discussed in the text.

The cited paragraph is relevant to the discussion of underground injection as a disposal technique in New York.

The Livingston County well had not received a State permit at the time the draft GEIS went to print. Since the draft GEIS was printed an additional disposal well in Wyoming County has also received all the necessary State and federal approvals.

New York State has elected not to accept primacy for UIC.

Industry has input into both the State and federal rulemaking processes. It is not appropriate to involve industry in intergovernmental negotiations. In addition, any actions affecting the regulated community are discussed with the Oil, Gas and Solution Mining Advisory Board which has industry members.
that double bonding be eliminated. We hope discussions between DEC and EPA are successful, and that this situation is resolved quickly.

1-494

15-25, 1st full para., line 8, DELETE phrase, "Depending on the severity of the problem" and REPLACE with "typically".

1-495

15-26, 2, 3rd para., line 4 through end of paragraph. QUESTION: Are figures given in these lines correct?

CHAPTER XVI. SUMMARY OF ADVERSE ENVIRONMENTAL IMPACTS RESULTING FROM OIL, GAS SOLUTION MINING AND GAS STORAGE OPERATIONS

1-496

16-1, 2nd para., line 6, DELETE reference to access road for reasons cited earlier in these comments.

1-497

16-2, 2nd full para., lines 1 and 2, DELETE references to visual impacts for reasons cited earlier in these comments.

1-498

16-3, line 2, ADD language to state that vegetation loss is temporary.

1-499

16-3, 3rd full para., COMMENT on this paragraph. Erosion and sedimentation are natural occurring phenomena that have happened over geologic time. Introduction of the concept that topsoil is a commonly held natural resource similar to air and water is incorrect. It should only be regulated to the extent that it prevents excessive erosion leading to resultant excessive stream sedimentation.

1-500

16-3, 4th full para., line 3, COMMENT: These permit conditions are ad hoc regulation and could be applied in a discriminatory manner.

1-501

16-4, line 6, CHANGE remainder of this paragraph to read, "...the site reclamation plan is left to the provisions of the lease agreement in conjunction with the law." DELETE last sentence in this paragraph. REASON: It is untrue.

1-502

16-4, b, COMMENT on this section: The operator is the best judge of the size of the site. The landowner is protected by the lease agreement. What constitutes productive use of land is subjective. Oil and gas operations could be considered to be a productive use of land, and not all land supporting oil and gas operations is agricultural. IDGA AGREES with the statement that 30 years is too long to wait to reclaim land.

1-503

16-4, c. DELETE this section. REASON: This is not an appropriate concern of the GEIS. Brine spills would have a temporary, one year impact on an area due to the high amount of rain in New York. Brine has a high mineral content and is viewed as a positive impact by some farmers. Soil is not a natural resource protected by law.

We agree, but an MOU to eliminate double bonding has not yet received approval from regional EPA legal staff.

1-493

These agencies are notified in only a relatively small percentage of the spills. The decision to notify other agencies is based not on the size of the spill, but on its consequential impacts: resources endangered, threat to public health, need for evacuation, etc.

1-494

Yes, these numbers are correct.

1-495

See Topical Response Number 4 on Access Roads as Part of Project.

1-496

See Topical Response Number 2 on Visual Resources and Assessment Requirement.

1-497

This chapter summarizes adverse environmental impacts, and short term vegetation loss is not a particularly adverse impact. However, vegetation cannot be expected to return to either the access road or the portions of the well site used for production facilities, both of which might be present for over thirty years.

1-498

See Topical Response Number 7 on Soil as a Public Natural Resource.

1-499

See response to 1-29.

1-500

The text as written is correct. According to correspondence with Seneca County Soil and Water Conservation District (Cool, 1982, Personal Communication #14) reduced crop yields can be expected for 20 years or more because of topsoil loss.

1-501

Comment noted.

1-502

Although the effects of some brine spills may be short-term, all environmental impacts must be addressed by the GEIS. See Topical Response Number 7 on Soil as a Public Natural Resource.